

The Australian COMMODORE & AMIGA

World of
Commodore
SHOW GUIDE
Inside

Review

**Preview:
Real 3D V2.0**



Understanding Accelerators

FOR BEGINNERS

Regular Columns:
AMOS, CanDo, C64,
Andy's Attic, Hot PD

**Reviews: Clarify 16-Bit Sound Sampler
Home Accounts II • 486 BridgeBoard**

AMIGA 4000



No Problem

Specifications

Microprocessor

A4000/40 - Motorola 68040 at 25Mhz
A4000/30 - Motorola 68EC030 at 25Mhz

Interfaces

One serial & one parallel port
External floppy drive port
Stereo audio output for hi-fi or monitor
RGB monitor / video port
Mouse & joystick game ports
Internal AT IDE Hard Disk interface

Storage

120Mb IDE Hard Drive
1.76Mb/880K High Density Floppy drive
2x3.5" Slimline drives (1 used)
1x5.25" mounting bay

Audio

4 voice, 8 bit digital audio with stereo output

Memory

A4000/40 - 2Mb 32bit Chip/Display ram 2Mb Fast ram expandable 16Mb
A4000/30 - 1Mb 32bit Chip/Display ram 1 Mb Fast ram expandable 16Mb

Workbench v3 featuring

Multitasking v3 Operating System, Compugraphic outline fonts, PostScript Output Support, MSDos 720K/1.44Mb Disk reader, up to 256 colour Workbench Screens

Graphics & Video

Advanced Graphics Architecture (AGA) Chips
New 256 colour screens, new 262,144 Ham8 colour screens from 24 bit palette of 16.8 million colours, resolutions from 300x200 up to 1280x512
15-31KHz scan rates with mode promotion for de-interlacing screens
Supports 15KHz 1084 Monitors & MultiSync monitors
x4 performance increase over ECS chips
New sprite features: 16, 32 or 64 bit wide screen independent pixel resolution
Backward compatible with ECS and original chip sets

Expansion

4 autoconfig Zorro III expansion slots, 3 PC/AT slots in line with Zorro III for use with audio & video digitisers



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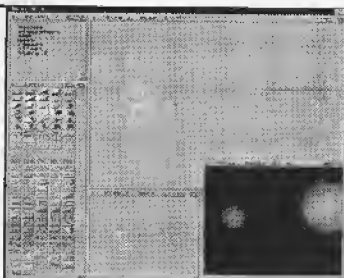
Contents

Vol 10 No 7 - July 1993

Real 3D 2.0

26

The State of the Art in Amiga Animation?



22 Understanding Accelerators

Speedy Computing. How an accelerator can help you.

32 Dual Personality

Running Ms-Dos Software on your Amiga 2000/3000/4000 with the Golden Gate 486

ENTERTAINMENT

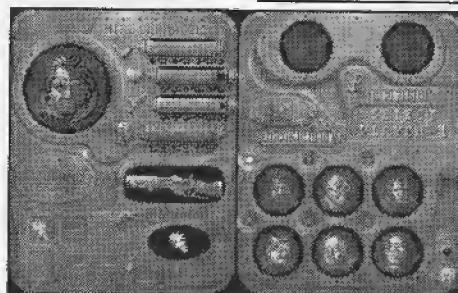
75 That's Entertainment - News,
hints & tips, letters, competition

76 Adventurers' Realm
Hints & Tips, Trading Post,
Problems, Help, Clever Contacts



77 Game Reviews
The Chaos Engine, Beavers,
SleepWalker, Vikings

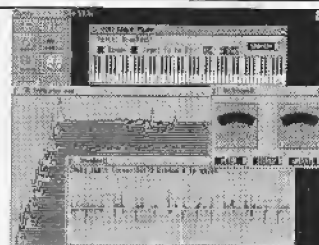
83 Solutions
- SuperFrog and Kings Quest Part 2



16 World of Commodore Show Guide

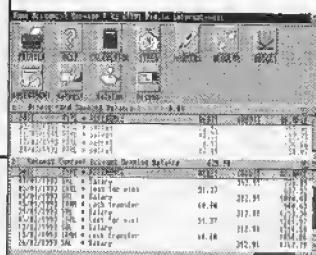
30 Microdeal Clarity

The first of the new cheap 16-bit sound samplers.



40 Home Accounts 2

A user friendly way of balancing your cheque book and working out your tax.



Regulars

- 4 Ram Rumbles
- 6 Notepad
- 14 Letters
- 46 Deluxe Paint Tutorial
- Animating in (apparent) 3D
- 52 Education Column
- Back to Basics
- 56 Amos Column
- The New Turbo Extension V1.75
- 59 You Can CanDo
- Your own Directory Utilities Part 3
- 64 C64 Column
- Tricks and Tips plus gossip
- 66 Andy's Attic
- Buying P.D. and readers' problems
- 72 Hot PD - Latest Public Domain

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Editor: Andrew Farrell (02) 879 7455

Fax: (02) 816 4714

Production: Brenda Powell

Layout: Tina Goins

Subscriptions / Back Issues:

Darrien Perry (02) 398 5111

Entertainment Editor: Phil Campbell

Advertising: Ken Longshaw

(02) 817 2509 Mobile 018 230 912

Advertiser's Index

ACAR Subs Form	18	Commodore	47	Public Domain Plus	58
Allen Computer	36	IBC, 27, 78, 79	61	Reef Works	67
Amadeus Comp	21, 55	Computer Man	2	Rod Irving	67
Amitech	44, 45	Computer Outpost	25	Scarlet	67
AmigaP/D Ctr	60	Computer Spot	41	Shop 4	21
Amiganuts	61	Gary Dellar	67	SigmaCom	34, 35
BitMaster	60	Desktop Utilities	12	Soft Logic	IFC
Brunswick	67	Don Quixote	13	Soft Wood	38, 39
CPA	53	Egghead	37	Software to Go	48
C64 Software	67	Electronic Design	OBC	Solutions Rendered	33
Code One	67	Entert Software	67	TapSoft	8
Computa Magic	42	Fonhof	43	Unitech Electronics	12
		Flying Erase Head	67	Wall Street Video	57
		G-Soft	47		
		HC Software	61		
		Hargware	57		
		Logico	15		
		Megadisc	29		
		MVB	10, 11		
		Pactronics	4		
		Parcom	61		
		Pelham	67		
		Phoenix	51		
		Power Peripherals	3, 5, 7, 9, 49, 63		
		Prime Artifax	70, 71		

Amiga Peripherals World of Amiga Specials

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Editorial

World of Commodore

It's show time. World of Commodore Amiga 1993 - three days of paradise for Amiga owners. Looking at the exhibitor list, this year's show promises to be bigger and better than ever before. Inside this issue of *Australian Commodore and Amiga Review* you'll find a complete show guide, floor plan and a coupon to save \$2 off the entry price. See pages 16 to 21 and 79.



During the show, several significant new products for the Amiga will be launched in the video and animation areas. With so many exhibitors, it shouldn't be too hard to find someone showing off the product you're looking for.

Be sure to bring your money too and allow a solid day to catch a seminar or two, grab a go on the Virtual Reality machine (all Amiga underneath of course) and snap up some of the software bargains. I'll be on the *Commodore Review* stand, along with some of our writers. So why not come and see how much worse we all look in real life!

We're looking forward to hearing your suggestions about the magazine and we will also try to answer any Amiga related questions you might have. As usual, we'll have lots of back issues available too, along with a range of PD software. See you there!

Home Computer Show Report

Last month we exhibited at the Sydney Home Computer Show.

Around 27,500 people visited the exhibition over three days. It was a noisy affair, reminiscent of the PC shows at Sydney's cramped Centrepunt venue in the early eighties.

Not wanting to be left out, we added to the energy level by pumping out a high volume Amiga multimedia presentation. It managed to leave most PC owners very impressed and maintained a steady crowd at the front of the stand.

Sigmacom showed off the Opal card, GVP sound sampler and G-Lock. Amadeus were also present with all the latest Amiga productivity titles and Commodore turned up on one corner of the Brash's stand. There the A4000 and A1200 were demonstrated by a number of enthusiastic Commodore guys who were also busy letting visitors know about World of Commodore.

Overall, it was a great show. Hopefully we will see more Amiga support next year, if indeed the date is not so close to World of Commodore.

Front Cover

This month's front cover was rendered using *Real 3D V2* by Gerard Pudsey and Karl Dewet. The image is 1500 x 2000 in 24-bit. It was colour separated using *Professional Page 4.0*.

Andrew Farrell

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UPDATE COLUMN

The big news is that we are moving! From 26th June we will be at our new address - 33 Alleyne St, Chatswood. Obviously we will have new phone numbers, but will inform you of those next month. Meanwhile we will have phone and address diverts so you won't lose contact with us. One thing is for sure - our move will not mean any lessening of the back-up service we are famous for.

Because of the vast number of products we have to move over to Chatswood, we have offered our retailers Amiga games at a discount, so look for them (with the Pactronics Label) when you go shopping.

C64 Owners - we know you are having trouble finding software, mice, joysticks etc. Just call us on (02) 748 4700 (it'll be diverted) and we'll send you a full list you can order from, through your local shop or mail order from Computer Spot (008) 252 130.

Amiga Owners - we now have RAM expansions for A500, A600 and A1200. For **AMOS users** AMOS Pro Compiler should be here by the time you are reading this, as should the new book, *Mastering Amiga Amos* which covers Amos, Easy Amos and Amos Professional. I know (by your numerous phone calls to the Amos club) how many of you have been waiting for these two new products!

More information next month.

Pactronics Pty Ltd, 88 Camarvon St, Silverwater, NSW (02) 748 4700



Ram Rumbles

Amiga Hardware Comparisons

On Compuserve, there's been some hilariously funny quotes on the subject of Amiga hardware comparisons. For example, a post from D Bieber comparing computers and fast food. (We've modified it slightly to make it understandable downunder.)

"Personally, the Mac is NOT user-friendly. It is minimalist/common-denominator. Or, to put it in hamburger terms Amiga => Pizza Hut ("have it your way" > CLI/Windows/expansion slots), Macintosh => McDonalds [don't look so surprised] (take it as we make it...), MS-DOS systems => "here's a cow, tomatoes, charcoal ... bring your own knife ..."

Denny Atkin's version is a little tougher on the Mac. He says: "Well, I'd go for it this way: Amiga = Aston Martin. Fast, smooth ride, but much harder to get parts and accessories for. Wonderful for the autobahn, but sometimes problematic on Main Street. Far more popular in Britain.

"486 = '85 Chevy Camaro. Good performance, nowhere near as tight and smooth as the Porsche. Parts and add-ons can be found at any auto store, and even Sears. Great for in-town driving, but can't keep up with or take corners with the Porsche on windy country roads. Annoying grinding sound in rear axle. Your friends have heard of it.

"Mac = VW Microbus. All your hippie artists friends drive them."

Local contributions to the Amiga metaphor collection are welcome. The best entry will receive a free one year subscription.

Amiga Removes Birth Marks

I thought you might be able to use this spotting in your magazine. On May the 10th I was watching the Ray Martin Show when Dr Wright came on with a story about treating birthmarks with lasers in a Sydney hospital. It sounded interesting so I keep watching and to my surprise and absolute delight the whole process was being run by an Amiga. I think it was an A3000 but I couldn't really see it properly.

Anyway firstly the doctor would lay the patient down and then draw a blue outline around the birthmark. (Note the patient had to be given anesthetic). Next the computer would digitize the area and a pretty nifty piece of software would map out the path the laser would follow. Finally the doctor would click OK and off would go the laser, slowly removing the birthmark all under the control of our beloved Amiga.

I bet that would have to be one of the most interesting sightings ever. So how about a free subscription? Well, you can't blame me for trying, can you.

Glenn Chivers

Maryborough Vic

Ed: No I can't. Well spotted, your subscription will commence from July.

Dark Justice

I'm just writing to say how much I enjoy reading your magazine each month and to add my bit to the media spottings of our favourite computer the PC-XT ... oops please read Amiga.

This sighting is quite obscure and definitely deserves a really big prize, (maybe a year's subscription). The show is called *Dark Justice*. They didn't show the computer so I can't say what model it was, but I got a good look at the 1084s monitor that we are all familiar with and a glimpse of Workbench 2. They were using the Amiga to get into the police records, of somebody.

I think you have an excellent magazine and particularly like the Hot PD section (being a modem user). I also think your features are excellent.

Andrew Quinn, Penrith NSW

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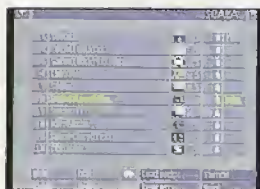
"Scala MM200 is the kind of software that many serious users simply can't afford to be without." *Amiga Computing (UK)*

Scala MM200

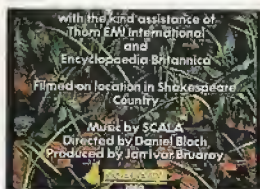
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SCALA
Why make it harder?

Notepad

ACE AmigaBasic Compiler

Are you looking for extra speed from your AmigaBasic programs? ACE is a Public Domain Amiga BASIC compiler which, in conjunction with A68K and Blink, produces ready-to-run programs. No special run-time shared libraries are required.

The language is both a subset and superset of AmigaBASIC with many features not found in the latter such as: turtle graphics, recursion, SUBs with return values, structures, arguments, include files, a better WAVE command which allows for large waveforms, external references, named constants and several extra functions.

In total, ACE currently supports some 150 commands and functions. ACE is still under development, but is quite usable in its present form. It's been tested on machines ranging from an A1000 running Wb 1.3 with 512K of RAM to a 68030 machine running Wb 3.0 with 5M of RAM. For moderately large programs to compile however, 1M is required.

To organise your copy, call Prime Artifax on (02) 879 7455. The disk sells for \$5 including postage and packing.

Next Amiga Graphics Chips: AAA2

(Or why we don't have *Wolfenstein II*). The new AAA2 chipset in development now has a number of enhancements planned including chunky pixel mode. So what is it, you ask? A Chunky pixel is one byte which contains the color of the same point on your monitor, so you can easily get the colour of a pixel just by Peek-ing or a Move.b. Normally you would have to go through all the bitplanes to read 1 bit and then com-

bine all those bits to get the actual colour of that pixel.

The Chunky pixel method will be a lot faster if you want to know which color a specific pixel has, but it also is a lot faster for programs that calculate objects one pixel at a time and store it. In chunky mode you just Poke or Move.b it to the right location and continue processing the next pixel, instead of having to split the pixel up in bits and then set/clear the bits in the corresponding Bitplanes.

PCs have used the Chunky pixel method for a long time now, and that's the reason why games like *X-Wing*, *Castle Wolfenstein*, *Alone in the Dark* and *Comanche* maximum overkill are a lot faster in Texture mapping (ie. Real timescaling and rotation) than games like *Legend of Valour* on Amiga, because all games of this type calculate the rotation/scaling one pixel at the time and then store it ... so when C= implements a Chunky converter or a Chunky screenmode then Amiga will have the best of both worlds and will again blow PC games like *X-wing* away by far, as it should be !

IBM Emulation on a Disk

PC-Task, a locally developed software based MS-DOS emulator for the Amiga, has reached version 2.0. The program uses your Amiga hardware so the faster you make your Amiga the faster emulation gets. You can get your Amiga running a screen as an IBM-PC with just a few clicks of the mouse button. The only thing not supplied is MS-DOS.

The program features: MDA and CGA graphic adapter emulation. Up to two floppy drives emulated. Two emu-

lated hard drives either File or Partition types. Serial and parallel port emulation and mouse emulation.

New features include: EGA and VGA graphic adapter emulation. Some CDROM support. Better mouse emulation. Better CGA emulation. Better Hard Disk Partition Support. Some speed ups in MDA and CGA emulation. Support for serial and parallel ports besides the defaults. Many other little improvements.

Current registered users who are down for an update should all receive the new version by the end of May. The update is \$10AUD or \$10USD for other registered users. For a copy of the demo version, which cannot write to disk, call Prime Artifax on (02) 879 7455 or the author on (03) 802 8513.

Newtek Introduces - New Toaster

At the NAB Show, Las Vegas, Nevada, Newtek launched the A4000 version of the famous Video Toaster. This is good news for Commodore and it's

AMIGA TIP OF THE MONTH

by Robert Glover

One of the little things I've wanted to do with my Workbench directories are alphabetize the icons. I had hoped there was a way to do it without arranging them by hand. There is!

Open the window in which you want to alphabetize the icons. Select all of the icons in that window (Right-Amiga A), and choose UnSnapshot from the Icons pull-down menu. Now select Update from the Window pull-down menu. The disk will whirl (or make whatever noise your particular hard drive makes), and all of the icons will appear at once - alphabetically. Now choose Snapshot Window Only from the Windows menu, and you're set. If you resize the window, just be sure that you only snapshot the window, and the icons will take the form of that window.



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put the Amiga back in the spot light as industry magazines and television recognised the Amiga and Toaster (yet again) was still the best value desktop video solution on the US market.

And what about a PA1 toaster? Well, there's still no news as yet. Our best hope is the Opal Vision board modules which should be launched this month - check out their stand at World of Commodore, July 2-4.

The new Toaster has a switcher with four video inputs and three internal digital sources, close to 300 video effects, an integrated graphics loader, a 24-bit character generator, and a new paint system. The Toaster also runs LightWave 3D, a three-dimensional modeling, rendering and animation system, and ToasterPaint, a video paint system.

The company announced that Lightwave will be used to create graphic effects for Steven Spielberg's *SeaQuest DSV*, coming out this autumn on NBC TV in the US. The Toaster also works with local area networks, including Novell NetWare, meaning it can be the video element in a corporate network.

Other New Video Hardware

There's been a few name changes and specification changes to the DMI range, which are slowly appearing in Australia in small quantities. The Video Editmaster is now two products: DMI Digital MediaCaster - full motion real-time MPEG video playback outputs to NTSC, PAL, S-Video, and RGB Analog. 24 bit colour. Single step and slow motion playback. Fits 2000, 3000, 4000.

The second version is the Digital BroadCaster non linear editing system. It features full motion JPEG technology (formerly known as Digital Editmaster), direct 32 bit pixel bus. SMPTE time code read/write. 720x486 resolution. For more information contact Ami-Tech, Color Computer Systems or G-Soft, see advertisements in this issue.

Commodore Marketing US

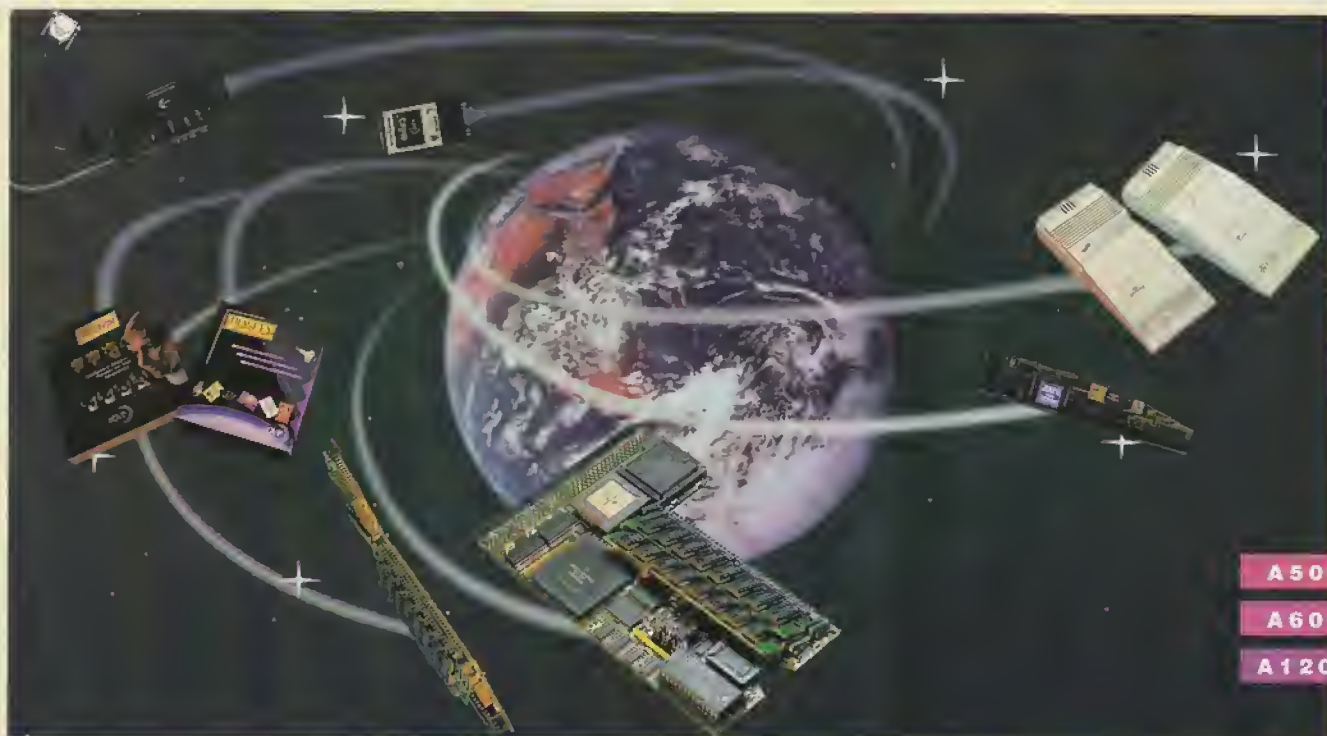
At the recent World of Commodore Show in New York, Geoff Stilley, Vice President of Sales at Commodore US, had some interesting things to say about marketing the Amiga.

The first thing Mr Stilley did after greeting his audience was to go through a list of the new products shipped in 1992, which were the A3000/040, A600, A1200, and the A4000/040. Then he described the way Commodore US prioritized their market focus:

1) **Video:** He explained that the Amiga is the "de facto" standard in computer video and that their efforts would be to push the Amiga usage to higher levels in this area.

2) **Training:** Mr. Stilley explained that Amigas are widely used in training situations and that President Clinton's training/re-training policies would create a good market for the Amiga.

continued on page 12



A 500

A 600

A 1200

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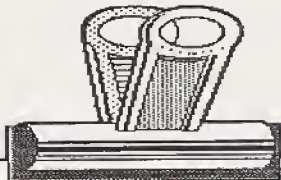
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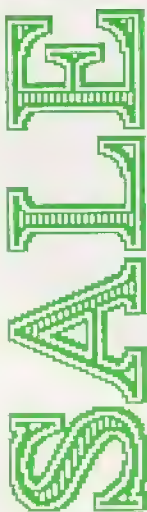


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3) Presentation Development: He mentioned that powerful software like *Amiga Vision* and *Scala MM200* enable a lot of people to create effective and creative presentations on their Amigas.

4) Kiosk Developers: He explained that Amiga was gaining more and more ground every day in the market of kiosks. He said that Commodore had orders of about 20 to 30 thousand machines for kiosk use.

5) The User Base: He said that Commodore wanted to give the users what they wanted and support developers.

Then he proceeded by talking about Commodore's advertising strategies. He explained that their idea was to advertise the Amiga with ads that "Jump off the page," decorated with quotes like "Hey! Go look at IBM, go look at Mac, then come back and look at the Amiga!" or "Nothing can sell you an Amiga better than a couple of minutes with a Mac or an IBM."

He explained that the company hired

for Commodore's advertising campaigns was Ketchum Advertising of Pennsylvania. He said that Ketchum is a very respected advertisement company with customers like Pizza Hut, Westinghouse, DuPont, and many more. It is the 18th largest advertising company in the world. Ketchum supplies Commodore with full-services including advertisements and promotions, yellow pages, and sales promos.

Mr Stilley then talked about Commodore's 1993 campaign. He said that the 1993 campaign would be more focused and would provide higher impact. He explained that they would use "Amiga people" in their advertisements, meaning they would advertise with the experiences of current Amiga users. He showed a booklet called "Commodore Multimedia" that opened up to expose four pages that included experiences of a physician, a software engineer, a kiosk designer, and a videograph. The booklet talked about how these people

utilized their Amigas for multimedia applications and presentations.

He further commented that the 1993 campaign would be aimed at getting the Amiga into the computer buyer's consideration set, making the Amiga a safer buy, and generating sales leads.

Mr Stilley then talked about their dealer and user-group support policies. He said that all the dealers were (or would be) supplied with A4000 demo systems, and would be given large volumes of advertising materials. He also mentioned that the dealers would be able to get info from Commodore's user-database, which includes information about current Amiga owners.

The user-group support would consist of (but not be limited to) regular mailings from Commodore, notices of promos, and loaner systems. Mr Stilley mentioned that user-groups in need of support should contact Commodore. He said,

"Call me, you will be supported." □

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Contact is an Australian product. Reviews are very complimentary:

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"Contact is a serious work organiser... an excellent tool..." *Amazing Computing* review of Contact 2.0.

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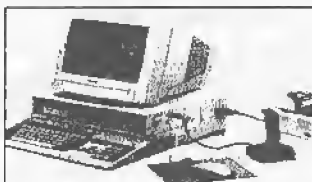
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Letters TO THE EDITOR

Piracy Still A Problem

Dear Andrew, I sent a letter requesting pricing information to five different Victorian retailers that I found in the September edition of *The Australian Commodore & Amiga Review*. All but one of the retailers simply didn't reply to my request (contrast this to an American retailer who sent me full pricing information and a catalogue.) The one respondent supplied an order form and a catalogue on disk. Here's where the story really gets screwy.

The retailer was XXX computers. I know this because someone on Fidonet mentioned the suspicious mail he received from them. The order form I received did not mention XXX. Nor did the disk catalogue. They had a different name which I cannot recall as I no longer have the material.

The crux of the problem is this. The disk catalogue included ... commercial titles being supplied for approximately \$3 per disk!

Just this week I received another disk. It is even more blatant about their activities. They have given me a code number to use instead of my name and address so that I cannot be traced if they are raided. They have initiated a number of other security practices to further limit their vulnerability and they've renamed their company to "TOTAL VISION".

I find their whole operation sickening and offensive. They seem to think they are providing a valuable service when in fact they are undermining the viability of all software support for the Amiga and hence the Amiga itself.

Name and address withheld

Ed: *It is one thing that people swap software among friends. However, as you rightly point out, companies profiting from selling commercial software which is pirated stand to wreck the software indus-*

try. They also undermine the value of software and place the burden of support back on legitimate retailers. This is unfair, unethical and illegal. Hopefully other readers will be equally discerning in tossing this sort of garbage where it belongs. Of course, if you do want cheap software there are many excellent sources of public domain disks which sell for under \$5.

Amiga 1200 vs MS-DOS

Dear Andrew, After five years of owning an Amiga 500 I feel it is time to upgrade. After reading about the much praised A1200 I initially thought this to be the natural choice. However, after pricing the A1200 at around \$1200 (even with the trade-up offer), and with an 80Mb hard disk (\$600) and VGA monitor (\$500), the \$2300 price tag does not seem reasonable, especially for a machine with a CPU that is over five years old!

Now I'm no fan of the make-shift world of MS-DOS, but for the same price you can buy a top-of-the-range PC and have access to all those games that Amiga owners can only dream of (Falcon 3 etc.). Unfortunately, I fail to see how I would come out in front by purchasing an A1200 - a 14Mhz 68020 is hardly state-of-the-art technology!

Now, no-one can deny that the new AGA chipset is certainly impressive, and that WB3 is far better than Windows. However, I recently read a review of the A1200 version of *Wing Commander 2*, in which it was reported that "... WC2 will stick with 32 colour graphics for the sake of speed ...". What is the point of having 256 colours available if the processor is too slow to make practical use of them?

Commodore seem to have built the A1200 down to a price rather than up to a standard. If CSA can produce a 25Mhz 68020 accelerator for \$250, then surely Commodore could have made the A1200 68020-based for around \$1500 - at least we would have a relatively up-to-date machine as standard. With the old '020 processor I do not think that the Amiga will regain its position as the ultimate games machine. Will we ever see *Falcon 3* or *Strike Commander* grace the Amiga screen? Until the standard Amiga has a better processor, it is unlikely.

*Cameron Dry
Tathra NSW*

Ed: *First of all, let's clear up a few of*

the comparisons you've made. The cost of an A1200 with 80Mb hard drive is around \$1500 - not \$1200 + \$600 as you've quoted (I obtained prices from several people who advertise in ACAR). Throw in one of the new multisync monitors for around \$600 and for \$2100 you have a great computer with 1993 graphics power, full 32 bit architecture and a reasonably fast processor.

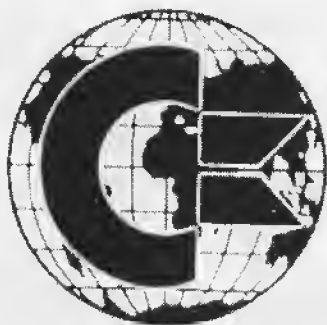
To get a PC up to similar specifications to the A1200 you would need a 386DX (say \$1600 for a good brand), Sound Blaster (\$150), Windows (\$150) and an XGA card (\$500) not to mention some extra RAM and a copy of MS-DOS. Even then you wouldn't have as many colours. Total cost, around \$2400 plus.

So, pricewise the Amiga compares well. Technologically, the Amiga's processor and architecture is still way ahead of the PC. Expansion autoconfigs, there's a high level of compatibility between hardware add ons and there's only one operating system.

On your typical PC getting the mouse to work with your sound card and fax/modem or selecting the right graphics driver for your monitor can be a nightmare. And then there's the issue of whether to use Geos, Windows, OS/2, Windows NT and the list is growing with all the hardware/software contentions that go along with that.

On the software front, yes Wing Commander II may well remain 32 colour. And maybe we won't see Wolfenstein on the Amiga - yet. But PC heads will have to wait a while yet to enjoy the power of our version of Deluxe Paint or fly a flight simulator as silky smooth as FA18 on an A1200. Give the AGA chips a chance and I guarantee you the new games coming will blow away anything the PC can throw at us today. There's lots of games coming - so stay tuned, be patient and I'm sure you'll find that the Amiga 1200 of today (or perhaps one that's due to arrive soon) will do everything you want.

CSA's add on cards are no comparison to the full 32-bit architecture of the new Amigas. They are merely bolt-on options that provide a band-aid solution. There's nothing wrong with the old '020 - it's fast enough for many applications and game play if the games are designed by real Amiga programmers. Of course, you could always go the A4000 route. □



world of commodore AMIGA

DARLING HARBOUR, SYDNEY
AUSTRALIA • JULY 2-4, 1993

Following is a guide to what you can expect to see at the Show. Not everyone was able to supply information at press time, so check out the Exhibitors List on the right to be sure you don't miss anyone.

ACAR (Australian Commodore and Amiga Review)

Booth B1, B3

Now in its tenth year of publication, ACAR as it is often called is a monthly magazine filled with news, information, product reviews and regular columns on getting more out of your Amiga. Produced locally, with much of the content and advertising created using the Amiga, *Australian Commodore and Amiga Review* is the most widely read Amiga publication in Australia. Meet the editor and writers on the ACAR stand, pick up back issues, and buy the latest in public domain software from Prime Artifex.

Alchemy Software Development

Booth G4

Public Domain Software. DirWorks 2.0 (exclusively). Hard drives (Seagate, etc. c/- Software Buyers Service). Video Backup System (Backs up 4D to video c/- Software buyers Service). ProNet/ProBoard PCB Design -(C/- Software Buyers Service), plus other products not yet launched at the time.

Allen Computer Supplies

Booth E4

World release of the UMAX range of colour flatbed scanners for the Amiga.

Release of commercial game *JetStrike* to be produced in Australia. Full range of Deja Vu and CLR software, Educational, game and utilities. Display of X Stitch Master cross stitch pattern maker.

Amadeus Computers

Booth G2

Complete Amiga solutions. Demon-

Overseas Exhibitors (with own stands)

Almathera, Amazing Computing, Amiga Format, Arcade Computer Entertainment, Blitz Basic, Bruce Smith Books, Inovatronics, Moonlighter Software, NZ Amiga, Scala, Wordworth & Digita

stration of VIDI 2 Framegrabber. Latest Amiga productivity, software.

Amazing Computing PIM Publications Booth C5

PIM Publications Inc. is a US publishing company with the longest running monthly Amiga magazine, *Amazing Computing*. PIM also publishes the world's only complete Amiga product guide, *AC's Guide to the Commodore Amiga*, as well as *AC's TECH for the Commodore Amiga*. *Amazing Computing* is an Amiga magazine filled with timely, accurate, and relevant information. Published biannually, *AC's Guide* contains complete listings of all the products currently available for the Amiga, complete lists of vendors, users groups, and public domain software. *AC's TECH* is a quarterly disk-based technical magazine for the Amiga with important information for programmers, hardware-types, and serious Amiga users. See all three titles at AC's booth.

Amiga Down Under Booth B10

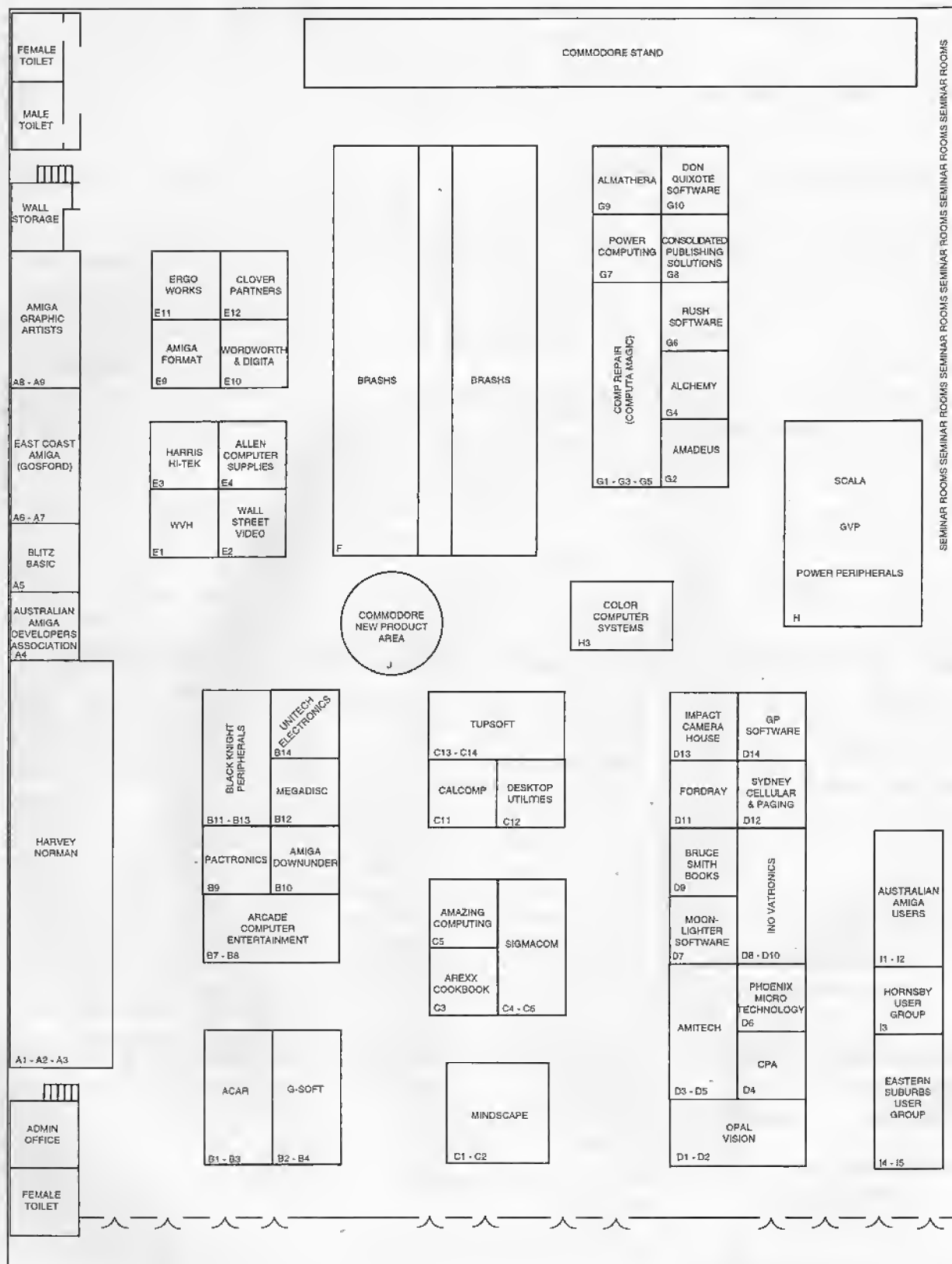
A bi-monthly Amiga magazine published in New Zealand and Australia. Pro-

Exhibitors List

Company	Booth	Size
ACAR	B1, B3	8 x 4
Alchemy	G4	4 x 4
Almathera	G9	4 x 4
Allen Computer Supplies	E4	4 x 4
Amadeus	G2	4 x 4
Amazing Computing	C5	4 x 4
Amiga Down Under	B10	4 x 4
Amiga Format	E9	4 x 4
Amiga Graphic Artists	A8, A9	8 x 4
Amitech	D3, D5	8 x 4
AREXX Cookbook	C3	4 x 4
Arcade Computer Entertainment	B7, B8	8 x 4
Aust Amiga Developers Assoc	A4	4 x 4
Aust Amiga User	I1, I2	8 x 4
Black Knight Peripherals	B11, B13	8 x 4
Blitz Basic	A5	4 x 4
Brasbs	F	24 x 5 x 2
Bruce Smith Books	D9	4 x 4
Calcomp	C11	4 x 4
Clover Partners	E12	4 x 4
Color Computer Systems	H3	6 x 4
Commodore	Back of Hall	
Commodore New Products	J	
Computa Magic/CompRepair	G1, G3, G5	12 x 4
Consolidated Publishing Solutions	G8	4 x 4
CPA	D4	4 x 4
Desktop Utilities	C12	4 x 4
Don Quixote Software	G10	4 x 4
East Coast Amiga Gosford	A6, A7	8 x 4
Eastern Suburbs U. G.	I4, I5	8 x 4
Ergo-Works	E11	4 x 4
Fordray	D11	4 x 4
GP Software	D14	4 x 4
GSoft	B2, B4	8 x 4
GVP	H	8 x 12
Harris Hi-Tek	E3	4 x 4
Harvey Norman	A1-A3	24 x 6
Hornsby User Group	I3	4 x 4
Impact Camera House	D13	4 x 4
INOValronics	D8, D10	8 x 4
Megadisk	B12	4 x 4
Mindscape	C1 & C2	6 x 6
Moonlighter Software	D7	4 x 4
OpalVision	D1, D2	4 x 4
Pactronics	B9	4 x 4
Phoenix Microtechnologies	D6	4 x 4
Power Computing	G7	4 x 4
Power Peripherals	H	8 x 12
Rush Software	G6	4 x 4
Scala	H	8 X 12
Sigmacom	C4, C6	8 x 4
Sydney Cellular & Paging	D12	4 x 4
TUPSoft	C13, C14	8 x 4
Unitech Electronics	B14	4 x 4
Wall Street Video	E2	4 x 4
Wordworth & Digita	E10	4 x 4
WVH	E1	4 x 4

• N.B. The OpalVision Booth will *not* be open on Saturday the 3rd of July

WORLD OF COMMODORE MAP



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SHOW GUIDE • WORLD OF COMMODORE SHOW GUIDE

duced entirely on Amigas, *Amiga Down Under* has been available in New Zealand since December 1992 and is now to be launched in Australia at the World of Commodore. The July/August issue will be available at the show complete with free cover disk and guide to the WOC.

Amitech

Booth D3, D5

Amitech will be demonstrating their new multi-platform machine, capable of running Amiga, Macintosh and IBM software in an amazing 256 colours. They will also be demonstrating their C.S.A. 12 gauge SCSI Accelerator card on an Amiga 1200, this should push it to a speed of about 10% higher than the Amiga 4000.

Black Knight Peripherals

Booth B11, B13

Will be demonstrating their "Quicknet" hi-speed networking card and total network solution package in a world premier. Also they are demonstrating their "Direct-to-Hard disk" stereo sampler in another world beating first. Plus their SAM Simply And Midi time code, the Crystal Sound 8 bit Stereo sampler and their exclusive EPROM programmers. Also they will be showing their new switch box solution "No more Switches", a software based solution for switch boxes.

Bruce Smith Books

Booth D9

Amiga publications which are comprehensive and easy to read. Titles are updated as they are reprinted to follow the latest upgrades and releases from Commodore. This ensures that every *Mastering Amiga* title will continue to provide you with fascinating information that is right up to date, plus hints, tricks and tips. Many books also have a support disk available which contains program titles from the book and, in many instances, helpful Public Domain utilities.

Clover Partners

Booth E12

Heavily discounted software for Amiga, IBM and Commodore 64.

Colour Computer Systems

Booth H3

- Media-Flex - Debut of Australian Multimedia System - Digital Video Non-Lin-

ear ONLINE editing system. Real 3D Version 2 - Fully featured 3D Animation, Modelling and rendering. Digital Mediacaster - 24-bit real-time scalable MPEG decoder. Digital Broadcaster - Full motion JPEG compression/decompression card. Vivid 24 - 24 bit f/buffer (2048 x 2048) 160 MFlop graphic processor. Personal Time Base Corrector - Professional TBC with adjustable controls - plugs into any Amiga or PC. Personal Vector Scope/Waveform Monitor - Video Vector Scope display with control software for Amiga & PC. Sunrize AD516/Studio 16 - 16 bit/8 track CD quality digital stereo sound card with editing and video synchronizing software. GLock-VGA+Video Encoder/Genlock - S-VGA graphic card/Broadcast quality video. Prime Time - PC Titling with Animation. SVGA display Compatible. Real 3D Version 2 - Fully featured 3D Animation, Modelling and Rendering.

Computa Magic/CompRepair

Booth G1, G3, G5

Golden Image: Hand scanner with optical character recognition software. Optical mouse Amiga 240 DPI resolution. Cordless Infra Red Mouse Amiga. RC600 1 MB Ram Card for A600. 3.5" floppy drives sourced from GI Germany. RC500 512K Ram Card for A500. *New Releases for the Show* - 2 MB PCMCIA card for A600/A1200. Brush Mouse now with 240 DPI resolution. RC2000 2-8 MB Ram Card for A2000/A3000 only 9CM x 13CM.

Rombo: VID12 Amiga colour digitiser. Megamix master audio digitiser with pass through port. Take 2 animation package with direct support to VID12. *New Releases for the Show* - VID12 RT Amiga colour video digitiser which works in real time to frame grab from moving video tape. VID12 RT 24 bit version of the above VID12 RT.

DKB Software: The Clock-Real Time Clock Module for the A1200, fits on the motherboard leaving the trapdoor free. DKB1202-A1200 68881 co-processor and real time clock board with connectors for 2 32 bit ram simms allowing up to 8MB of 32 bit ram. Also comes with magic memory which will allow up to five MB of 32 bit ram and still see PCMCIA RAM

Coombe Valley Software: Four new education titles - Reasoning with Trolls (Amiga Format Gold Award), Tidy the

SEMINARS: Held every day of the show

Title	Presenter	Contents
1 MULTIMEDIA VIDEO	CHRIS MILLS Director, Real Time Graphics Ltd	Covers the world of digital graphics, including pre-production, design, animation & rendering, desktop video, multimedia, virtuality and editing.
2 WORD PROCESSING MADE EASY	JEREMY RHILL Managing Director, Digita	Get much more from your Amiga than simple word processing: today's software allows you to produce professional documents with ease!
3 AMIGA BASIC BLITZED	SIMON ARMSTRONG	An introduction to Blitz Basic from the man who wrote it!
4 IBM COMPATIBLE SOFTWARE	MICROSOFT	See the latest developments in MS-DOS software including all the new Windows products.
5 CD ROM TECHNOLOGY	PAUL RALPH Managing Director Almathera	What is CD Rom Technology all about - from the world's largest public domain CD ROM software library.

DISPLAYS: Continuously showing

1 VIRTUAL REALITY	On Commodore Stand	Hands-on demonstrations - or is it heads in? you won't believe it's real. Or is it?
2 COLOR VISION	On Commodore Stand	Interactive multimedia including commercial systems. Paint your house a new colour at the touch of a button.
3 MULTIMEDIA	In the multimedia Demonstration Theatre Using Opal Vision, Phoenix, Scala & Amiga technology	See how far multimedia has come today. You'll feel it, see it, almost smell it.

House, Maths Dragons (Amiga Format Gold Award), Picture Fractions.

White Knight Technology: Amiga Video Backup system - backup your Amiga hard drive to your video recorder.

New Horizons/Central Coast Software: ProWrite word processor for the Amiga. Quarterback harddrive backup software.

Consolidated Publishing Solutions **Booth G8**
Publishers - *Australian Multimedia Magazine*.

Desktop Utilities**Booth C12**

Will be releasing the new version of *Contact*, 2.1.

Contact is a highly successful personal contacts manager - a memory resident database program that you can use for instant access to names, addresses, phone and fax numbers and a host of other kinds of information. It is an ideal telemarketing database solution. It comes bundled with CalcKey, a memory resident calculator. *Contact* is designed and published in Australia. Reviews are highly complimentary.

Users of *Contact 2.0* will automatically be upgraded to 2.1 before the retail release. They will be demonstrating all their usual desktop publishing software.

Ergo-Works**Booth E11**

The 'Back-Up' is a totally unique product to support the back and demand the user holds perfect posture. It is used as an alternative to existing back rests or a substitute where none are provided. The 'Back-Up' effectively targets the vulnerable lumbar area and provides support in an adjustable fashion using the knees as an anchor point for reverse pressure. As such it is prescribed whenever back pain sufferers must sit for any length of time without proper lumbar support ... for instance, at computers where the users are required to sit for hours and often sit forward away from the back rest. It is also recommended for travel on airlines or in cars. The 'Back-Up' has earned international acclaim among orthopaedic surgeons, physiotherapists and chiropractors for its ergonomic value.

GP Software**Booth D14**

GP Fax - Fax software for Class 1 and Class 2 fax modems. Allows your Amiga to send and receive faxes from any fax machine. Modems and software available at the show. GP Term - Communication software for accessing bulletin boards and video text services. Canon Printer Drivers for BJ300-330 bubble jet printers. GP Touch - Touch Screen Driver for Microtouch systems.

GSOFT**Booth B2 and B4**

This year GSOFT Australia will be demonstrating a large number of products. Including the:

Audio Engineer. The premier Amiga sound sampling and editing system. The standard by which others are judged. Australian made.

Super Sound. Sound enhancement device. Significantly improves the quality of all Amiga audio output. Use with Audio Products, Scala, even games. Australian made.

Touch Windows. A unique touch screen that can be added to a standard Amiga in minutes. Plugs into the serial

port and provides simulated mouse movement. Works with all software. Excellent interactive product.

TurboPrint. A sophisticated replacement for the workbench printer preferences system that provides a host of additional features and significantly improves performance.

Directory Opus. The ultimate directory control utility. Puts you in the driving seat. Australian Made.

AX2000. 2Mb Chip Ram expansion board. Simpler and cheaper than the opposition. No soldering, single board installation. Genlock compatible. Australian Made.

AXRAM-4. A500 memory board. Installs to the A501 slot and holds 2 or 4 MB Ram (uses 1Mb Simms). Can be used to obtain 2Mb Chip Ram on the A500. Australian Made. And other miscellaneous hardware and software.

Impact Camera House Booth D13

The Impact Camera House stand will display complete Desktop Video setups using the Amiga. The DTV and Multimedia display will include: Time Base Correctors, Video Edit Controllers, CD Quality Digital Audio, Scala, Framegrabbers, Genlocks, Titling and Graphics software, 24 bit board. Impact Camera House specialise in complete video solutions. Impact Camera House are the Desktop Video experts.

Megadisc Pty Ltd Booth B12

Megadisc magazine and information resource for the Amiga. This is the largest surviving Amiga-specific disk magazine in the southern hemisphere and is at issue #34, which will be released at the World of Commodore. The largest Amiga Public Domain library in Australia. Megadisc's range of low-cost software. Cheap networking for the Amiga. Kickstart switch for the Amiga.

Moonlighter Software Development Booth D7

Ami-Back - The premier backup program for the Amiga. It is the fastest and most reliable Amiga backup program available. Ami-Back offers complete SCSI tape support, data recovery, compression, Image backups and more!

Ami-Back Tools - A collection of the best utilities to keep disk drives performing flawlessly.

TapeWorm - FS - A filesystem for tape drivers. This unique program allows any SCSI tape drive to act like an AmigaDOS volume, just like a floppy or hard disk drive.

Ami-Back Plus Tools - The Ami-Back and Ami-Back Tools combo pack.

Phoenix Microtechnologies Booth D6

Phoenix will have a large number of products at their stand this year. Some of these are:

Merlin: Professional 24Bit Card for professional purposes. User programmable resolutions up to 1280 x 1024 in 24Bit or 2048 x 2048 in 8 bit, high refresh rates for a real flicker free display. Graphics co-processor running at over 40 x the speed of the Amiga blitter providing very fast screen refreshes. Fast intuition emulator enables you to run WB programs under Merlin screen modes. Supports Zorro 2 & Zorro 3 interface.

Z3 Fastlane: High Performance SCSI-II DMA controller using the 32 bit Zorro 3 interface on your A3000 or A4000. Memory Expansion for up to 192Mb of Ram. External SCSI-II interface enables you to connect other SCSI-II devices externally.

Blizzard 1200/4: Fully Populated 4Mb of 32 bit fast Ram for your A1200, maths co-processor socket enables you to use up to a 50Mhz 68882.

Blizzard 1200 add 4: This board brings your 1200/4 up to 8Mb providing you have up to 10Mb on your Amiga 1200.

Blizzard 1200 clock: Fits inside your A1200 giving you a clock on your motherboard.

Blizzard Turbo Memory Board: Do you need more speed & memory? The Blizzard Turbo Memory board runs your A500 or A2000 at twice the speed and you can add up to 8Mb of Ram. The memory is full DMA compatible & auto configuring. The speed and the memory are both switchable so if you find a problem running Fast Ram or the extra Speed you can turn it off.

Aladdin: Allows the Amiga range of computers to be used as powerful tools for lighting design and complete lighting control and effect generation. Aladdin is a powerful and sophisticated lighting con-

trol system with features which meet or exceed the capabilities of dedicated consoles many times more expensive.

Power Peripherals, GVP & Scala Booth H

Power Peripherals will be present at the WOC show with a wide range of products, including some new Amiga 1200 products from GVP. For the Amiga 1200 we will have the A1230 Turbo, a new 40Mhz 68030 accelerator from GVP which allows up to 32 Mb of 32 bit ram, and offers an optional maths chip, providing Amiga 3000 performance. The other Amiga 1200 product is the SCSI-RAM board from GVP which offers up to 8Mb of 32 bit ram, optional FPU plus, a SCSI controller which can be attached to either an internal or external drive.

The Impact-Vision 24 will be on show, GVP's flagship 24 bit board, with built in genlock, realtime framegrabber and colour splitter. With a comprehensive range of software, it offers a lot for the video enthusiast.

Scala will be on display - the ultimate multimedia presentation program on any computer platform - alongside GVP's G-Lock, a low cost, high quality genlock for all Amiga models, with powerful software control of all functions. The Retina Board will be on show, an inexpensive 24 bit board with resolutions of up to 2400 x 1200 pixels, incorporating workbench emulation. With Retina will be VLAB, a low cost realtime framegrabber which interfaces nicely with the Retina board.

DSS8+ (Digital Sound Studio 8 Plus), an eight bit Audio Digitiser, will be there, with its revamped software and super new totally clear casing.

Finally, Phonepak will be demonstrating its voicemail capability with a software interface which performs interactive questionnaires.

Rush Software Booth G6

Our range of Australian Educational Software titles for the Amiga 600, 500 and 1200 computers.

Teachers Markbook: A teaching necessity to save you time.

Crossword Wizard: A comprehensive Crossword Creator that allows you to create, edit and print crossword up to a maximum of 20 x 25 characters.

Kidsbase: A database management

system that provides an approach for developing databases that is simple for both parents and students.

Teacher's Test Kit: The program allows you to load a multiple choice and/or short answer test for completion on the computer.

**Sigmacom
Booth C4, C6**

Sigmacom will be carrying a very large range of Amiga hardware and software at special show prices. Of great interest will be the new CSA 12 Gauge 50MHz accelerator with SCSI RAM card. They will be offering "while-you-wait" hard drive upgrades for Amiga 1200s at unbelievable show prices, as well as incredible pricing on SCSI Quantum hard drives. Other popular products expected for the show include high density floppy drives for most machines, Opalvision, and the new SCSI 2 cards for the A4000.

**Sydney Cellular and Paging
Booth D12**

Sydney Cellular is a communication company and a premium Optus dealer.

Other major dealerships include Metagram Australia, Hyundai and Panasonic. Sydney Cellular's product range is as follows: Cellular Mobile Telephones, Alpha Numeric Paging Systems, Keyphone (Commander-type) Systems, Fax Machines, Answering Machines, Cordless Telephones and a range of Cellular Accessories.

**Unitech
Booth B14**

Unitech will of course be demonstrating their special cables for the Amiga 600 and 1200, also their new monitor switch boxes, allowing you to use either the AMI RGB or the Hi res Flicker fixers without reconfiguring. Plus they will be demonstrating the new Kickboard Plus and will have some of the old kickboards on sale.

**Wall St Video
Booth E2**

Wall St Video will be releasing their new Amiga 1200 Training Video. For beginners to the intermediate. It explains how to setup both the hardware and software of the Amiga 1200, gently taking

users by the hand and guiding them through each step of using a computer from receiving it to installing software and external devices.

Also they will have a collection of copyright free music for sale on C.D. Rom, cassette and DAT.

Of course there will also be education and training software, including the Kindwords family.

**Whitestone (AREXX Cookbook)
Booth C3**

Book WL 2 disks - a complete tutorial guide to programming the Amiga in AREXX. Demo video of ASDG's Morph Plus.

**WVH
Booth E1**

Prism Pal Colour Splitter. (Video Interface 70 Disi Pro-net and Pro-board. Schematic capture and PC board layout. Day/night classes - Amiga tuition. Scram 500, 8 M Byte Ram/SCSI Card (8 bit). Scram 2000 8 M Byte Ram/SCSI Card (8/16 bit). □

BIRTHDAY SALE AMIGA

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Understanding Accelerators

Daniel Rutter explains why you would want to buy an accelerator for your Amiga. He has also promised to demystify much of the associated jargon of this field. Read on and be enlightened!

Speed. It's one of the major selling points for computers. It is also the third thing the owner of a low-powered Amiga should go for in expanding the machine. The first two are more RAM - cheap - and a hard drive - not so cheap. A big accelerator will cost even more - for the top of the line \$2500 is a bargain price - but you don't have to pay anything like that much.

First, do you need one at all? As I said above, if you don't have a hard disk, get one first. You'll get much more increase in functionality per dollar spent from a hard drive than from spending big bucks on a turbo machine which is still hobbled by floppy access speeds.

RAM is another matter, which I'll deal with later - suffice to say that RAM expansion for low speed Amigas is not much use once you go to a faster processor.

And the bad news for A600 owners is that if you want to go faster, you need a whole new computer. No accelerators exist for the 600, and there probably won't ever be any. Sorry. But for the majority of Amiga users who feel the need for speed, all you need is the cash - and some knowledge.

Throughout this article I'm going to be using some technical terminology which would be awkward to explain as I go, so there's a glossary at the end.

What's Inside Your Amiga Now?

Some definitions. Most Amiga users are running standard A500, A2000 or

A600 machines, which all run on a Motorola MC68000 Central Processing Unit (CPU). This CPU was the absolute state of the art super turbo chip in about 1979. For sheer number crunching, a 68000 does about 550,000 operations per second, or 0.55MIPS.

"a 68000 does about 550,000 operations per second"

In simple number crunching, a 68000 based Amiga is therefore about three times as fast as a stock, original IBM XT. This is not very fast at all.

Fortunately, the Amiga's architecture includes several other chips which do graphics and sound work for the CPU, and so many operations happen much much faster than the CPU power would seem to indicate. A 68000 Amiga can animate game graphics very quickly and play sound at the same time, with the CPU just coordinating proceedings - not having to figure it all out by itself.

Why Upgrade?

However, there are some things a 68000 machine is slow at. These are the processes which don't require sound or graphics, but just number crunching muscle. For example: **Archiving** - packing files into a compressed form for transmission or storage; **Rendering** - high powered graphics work which produces the kinds of pictures you've seen on recent ACAR covers - and, to a lesser

extent; **Vector graphics** - the kind of graphics you see in games like *Indy 500* and *F/A 18 Interceptor*, where everything is made up of flat shapes (or polygons) stuck together. All of these applications go quite slowly on 68000.

68000 is also slow for many business applications - spreadsheet recalculation, database searches, text formatting, and desktop publishing. Working with a large document on a 68000 machine is only fun if you're paid by the hour.

And a faster machine lets you back up your hard drive to floppy with compression at an acceptable rate; have lots of Workbench windows open without dying of boredom and multitask properly while downloading with a modem faster than 2400 baud or doing any other CPU intensive task.

If you do any of these things, a faster machine will be nice. But what to get? Before I get into the options, let's look at the disadvantages of speeding up.

The Down Side

There's only one real problem with beefing up your machine, except of course for the cost. This is incompatibility. If programmers wrote entirely to the rules laid down by Commodore, no program would break when run on an accelerator which is also built entirely to the rules. But since programmers, especially game programmers, routinely ignore the rules, and hardware manufacturers can sometimes come up with some odd interpretations too, incompatibility is a problem.

Don't get me wrong - recently written serious software and most recent games will work fine. But it is hugely annoying to see a favourite game kick the bucket unless you haul a whole chunk of hardware out of your machine.

This is why it's important to get an accelerator with a fallback mode - one that can be switched back to 68000. There are several ways to do this, but if the accelerator you're considering can't be switched back, then make sure in advance that everything you want to run will run. A good example of a fallback mode is the GVP A530 Turbo

40MHz 68030 expander for the A500. Moving a switch on the front makes it behave as if it isn't plugged in - you're back on 68000, with no expansion RAM and no hard drive.

Personally I'd prefer it if you could individually switch each option - RAM, CPU and HD - but this is a decent solution.

There are also some things an accelerator won't make faster. It won't make your floppy drives work any quicker. It won't accelerate most games, since they're written to run continuously at a given speed. This is actually a good thing, as anybody who's played an "ungoverned" game on a turbo machine will tell you! But, of course, it WILL allow you to make mistakes much faster; accidentally mashing a load of files can be done a lot quicker on a fast machine!

But all these are minor niggles - like a hard drive, an accelerator is something you try once and then can't live without. So here are the options!

Entry Level - Sub Sonic

At the bottom we have the 68010 and 14MHz 68000 designs. These are simple high speed CPUs with no other muckings about - they use the original RAM, the original connections (more or less) and are the only accelerator you could reasonably build at home. Their proponents are fond of using the phrase "up to" before quoting the acceleration given; there's a reason for this.

Basically, these accelerators are for the tinkerers out there, since the most increase you can possibly get, from combining a 14MHz clock arrangement and 68010 processor, is about 15% overall.

From just plugging in a 68010 you'll get about 5% more speed, and from running a 14MHz 68000 you'll get about 10%. This is, in case you hadn't noticed, peanuts - the accelerator is hobbled by the custom chips, which aren't running any faster than normal. Simply expanding your RAM above 1Mb on a 500/2000 or above 2Mb on a 600 will give you a 30% speed increase. But then again, you'll never spend more than \$50 or so on this kind of design.

Advantages? Dirt cheap, fun to build if you're into this sort of thing. Disadvantages? Hardly does anything, no commercial designs available, 68010 processors very rare.

16MHz 68000

One rung further up are the 16MHz 68000 accelerators with cache RAM. The cache allows them to genuinely run twice as fast as normal, and the acceleration is noticeable, though not drastic. The two accelerators of this sort available in Australia are the venerable ICD ADSpeed at around \$360 and the Blizzard Board, which also supports extra RAM and KickStart mapping into RAM so you needn't buy a KS swap board, at around \$450 with 1Mb.

Advantages? Genuinely faster, not too expensive. Disadvantages? You can get an awful lot more speed per dollar if you spend a little more.

68020

The next step on the ladder is the 68020. This is the processor which drives the A1200, and is quite fast enough for most people's purposes, particularly when allied with the new graphic architecture.

You see, the new Advanced Graphic Architecture machines - A1200 and A4000 - are twice as fast at graphic operations as previous models, which still use just about the same chips as the eight year old A1000. This means that a hypothetical 68000 driven AGA machine would do graphic stuff twice as fast as a stock 68000 A2000. Number crunching speeds, which are entirely dependent upon the CPU, don't improve with AGA.

The '020 is also the first processor to need 32 bit RAM, and this field takes a little explaining. All 680x0 series processors are 32 bit. This means that inside the chip they deal with information 32 bits at a time - 32 individual 0s or 1s.

However, the 68000 and 68010 are only 16 bit externally - so even though they process 32 bits at a time inside, they only talk to the outside world in 16 bit lumps. So, the non-AGA Amiga ar-

chitecture is based around 16 bit transfer; all the RAM is set up to deal with 16 bit lumps, for instance.

But processors from the 020 upwards are 32 bit all down the line - they work in 32 bits inside and out, with no bottleneck on input or output. Where this becomes a problem is when they hit other bits of the computer that are still working in 16 bit - for example the above mentioned RAM. An 020 would prefer its RAM to be configured to talk to it in 32 bit lumps, and in fact runs twice as fast if the RAM is set up that way.

"an accelerator is something you try once and then can't live without"

Thus a standard A1200 with 2Mb of chip RAM and no fast RAM does around 35% of the speed of an A3000. But add fast RAM and suddenly you're doing more than 60% of 3000 speed - not a bad improvement! The catch is that if your fast RAM gets filled up, you suddenly drop back to the original speed, which can be an unpleasant surprise.

The speed decrease on older machines with bigger processors is even worse when you run out of fast RAM. This is because the bigger the processor, the more it needs 32 bit fast RAM to work with, and also because older machines only have 16 bit Chip RAM, as opposed to the 32 bit chip in the A3000, A1200 and A4000. When an 030, for example, runs out of fast on an old machine you're suddenly down to 70% of 68000 speed!

Back to the 020.

68020 accelerators are not all that popular these days, with the more powerful 030 not very much more expensive. But they're still around - for example the Commodore A2620 board, which was what powered the original A2500. The 2620s aren't made any more, but they've got a 14MHz 020, 68881 and 68551 MMU and make quite a useful machine out of a stock 2000. There are still a few around in the secondhand market.

The only other popular 020 accelerator is the A5000 unit, which is not on sale in Australia. After considering the hassles of currency conversion, foreign warranties and all the rest of it, you're better off with 030.

Advantages? Real speed. Good enough for many. Disadvantages? Same as for the cached 16MHz 68000.

68030

This is what the Amiga 3000 uses, and at the moment it's pretty much the standard. 030 machines clock in around ten times faster than a standard 1Mb A500, which is plenty fast enough for most applications. There are lots of 030 accelerators around, made by GVP, CSA and others, and the prices are fairly close. You could even go for a cheap second hand A3000, which removes the problem of having 16 bit Chip RAM and 32 bit Fast RAM since it's 32 bit all down the line, just like the AGA machines.

Advantages? As fast as you need; a 40 or even 50MHz 68030 howls along at more than six MIPS and makes everything smooth and easy. Disadvantages? If you've got the money, none!

68040

These machines are still for the serious professionals or those whose solution for all problems is to hurl money at them until they go away. An 040 machine is VERY fast, will exhibit quite serious incompatibility problems with all kinds of software written close, but not close enough, to Commodore spec and is really way more power than most people need - and considering that you're talking the thick end of \$3000 to get an A2000 up to 040 speed with decent RAM, 040 really is out of reach of most people.

Advantages? Goes like the proverbial greased budge with its bottom on fire. Disadvantages? You'll need a second mortgage or a sawn-off twelve gauge to raise the money.

AGA Upgrading

This is the option lots of people are

looking at now - get a 1200, A4000/030 for more power or even a mighty A4000. Why stick a V12 engine into a Volkswagen when you can go out and buy the Jaguar?

If you've got a use for AGA graphics - desktop publishing, paint programs, rendering and so on - then buying an AGA machine is a good move. If you want to play the great 256 colour games that'll be coming out to exploit a platform whose slowest machine runs an 020, then AGA is also the one for you.

But remember compatibility problems - you can surmount quite a few with the boot menu chip selection option on AGA machines which lets you boot them as old chip set machines, but there's quite a bit of software - games, of course - which simply spit the dummy at anything not running a 68000 processor, and there's nothing an AGA machine can do about that.

(A new disk called A1200 Make It Work is available. This disks boots up your system as a Workbench 1.3 machine and will vastly increase the number of older games that will work on your AGA Amiga - Ed.)

But AGA is undeniably the way of the future, and prices are dropping every day - even if it does become possible to economically upgrade a standard machine to the new chipset, there's no way it can be as elegant as getting a more modern design to start with. If you're going to spend a lot of money anyway, this might well be a better way to do it.

Glossary

68000

The original, slow Amiga processor. Also used in the original Macintosh, Atari ST and some other old machines. Now being incorporated into all sorts of appliances because it's fairly powerful and dirt cheap. Runs at about 0.55 MIPS. (Millions of Instructions Per Second).

68010

Barely faster than 68000. Something of an orphan; nobody makes it, nobody uses it. A cute toy but nothing more. About 0.555 MIPS.

68020

A major development, four times the power of the 68000. Used in the old A2500, new A1200, the original Macintosh LC, the original Macintosh II. A good cheap accelerator option but not real power. About 2.5 MIPS.

68030

The middle ground. Not cheap but not amazingly expensive, twice the power of the 020. Used in the A3000, A4000/030, all the cheap Macintoshes. About 5 MIPS.

68040

Vroom, vroom. Four times the grunt of the 030. Quite expensive but the price is coming down. Used in the A4000/040, the big Quadra Macintoshes. About 25 MIPS.

68060

The next in the chain, and not publicly available yet. Promises maybe four times 040 speed. Will NOT be cheap, and will run at maybe 100 MIPS.

68070

An anachronism. This one was made when the 010 was new and nobody thought the line of 680x0 processors would get this far. It's just a 68010 with an MMU (see below), and you'll probably never see one.

680x0

This means any processor with 680 at the beginning of its number, 0 at the end and one digit in between. Hence it covers 000, 010, 020 etc. Likewise 80x86 refers to any one of the Intel PC series processors - 80286, 386, 486.

AGA

Advanced Graphic Architecture. The new Amiga graphics chipset. It offers 256 colours, on screen at once from a palette of 16.8 million, and a new HAM8 mode which gives 262,000 colours at once from the same vast palette of 16.8 million colours. We're talking photo-realistic images here. There's also new flicker free high resolution modes when used on the right sort of monitor. On

top of all the great new graphic modes, AGA makes all graphic operations twice as fast.

Clock Speed

This is the speed at which the CPU runs. It is measured in megahertz, or MHz, which is millions of cycles per second. A standard 68000 Amiga runs at 7.14MHz, accelerators can run at 14, 16, 25, 33, 40, 50 or even faster.

CPU

Central Processing Unit. The main processor or brain for the computer, which coordinates all operations and executes the program instructions.

FPU

Floating Point Unit. Processors from the 040 up have an FPU built in, the 020 and 030 can use a separate 68881 or 68882 FPU. FPUs are only of use if the software you're running supports them and they make heavy number crunching operations like rendering run

much faster. The A3000 has an FPU built in, one is optional on the A1200.

MHz

See Clock Speed.

MIPS

Million Instructions Per Second, a general measurement of processor speed. MIPS is a unit of measurement often used to compare computer systems, and while it is close to meaningless for comparing different types of computers - for example IBM versus Amiga - it works fairly well for comparing computers of the same sort.

MMU

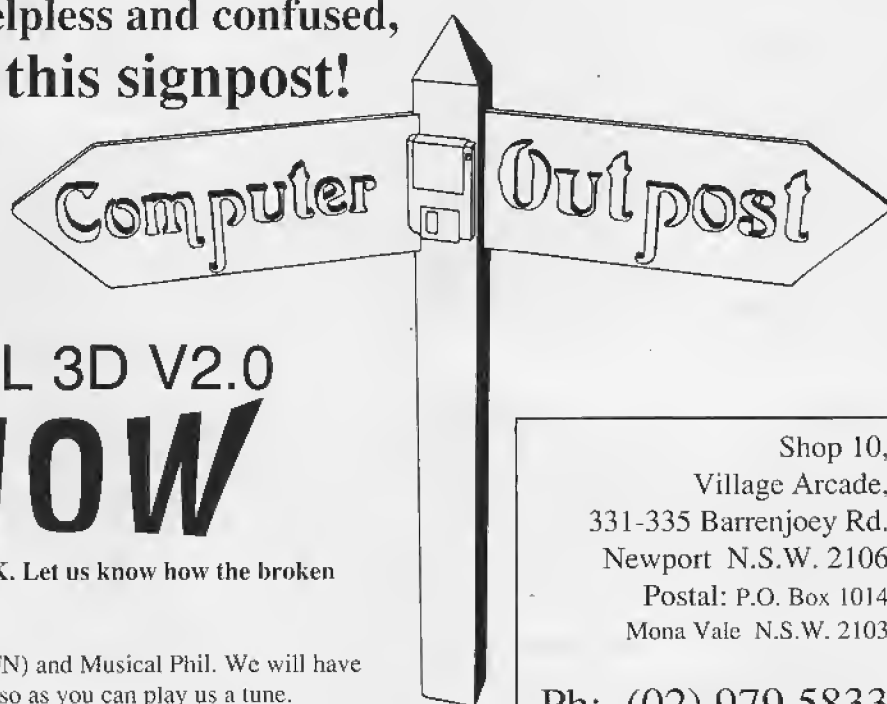
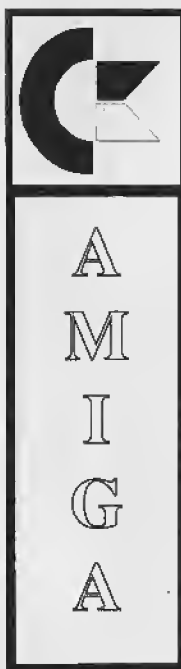
Memory Management Unit. Processors from the 030 up have an MMU built in, but there are cheaper versions (68EC030, for example), which don't have it. The 020 can use an outboard 68551 MMU. An MMU allows specialised memory manipulation operations to be performed - for example using

hard disk as "virtual RAM" to allow giant storage. A MMU also allows you to run an operating system with proper memory protection, which AmigaDOS doesn't have yet. So for most users a MMU is not necessary.

RAM

Random Access Memory, the stuff your computer uses to store data temporarily and work on it quickly. On the Amiga it comes in three flavours, fast, chip and slow-fast. Chip RAM is the memory used directly by the custom chips for sound, graphics and anything else. Fast RAM is expansion above the Chip RAM limit. Slow-fast RAM is normally found only in A500s - it's what you get when you have a 512k expansion unit in the trapdoor expansion but haven't configured the machine for 1Mb of chip RAM. The 512k above the chip RAM is not accessible for graphics and sound, but neither does it work faster like fast RAM. □

If you feel lost, helpless and confused,
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REAL 3D V2.0
WOW

Hello Aaron K. Let us know how the broken
foots going.

Ahoy to Mal(FN) and Musical Phil. We will have
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Real 3D 2.0

First Impressions

It's more expensive than any previous 3D rendering and animation package for the Amiga. It's also claimed to be many times more powerful. Andrew Farrell takes a first look at the latest contender in the world of Amiga animation.

I have a confession to make. *Imagine 2.0* has been sitting on my shelf unused. You see, at the start of '92 I learned *Draw 4D*. It was quick and simple, yet powerful enough to handle some animation work I was doing at the time. (Editors spend only some of their life editing - the rest of the time I'm a serious Amiga user like you.)

When *Imagine 2.0* arrived, I rushed out and bought it for \$499 from Hard Disk Cafe. However, only a few weeks later, with me still struggling with the poorly written manuals, I learned of *Real 3D 2.0*. I packed up *Imagine* and decided not to invest valuable time learning it - this new package sounded much better.

As time went by, reports of *Real 3D 2.0*'s many features started to pour in. Eventually we got our hands on a complete feature list, which appeared in Notepad. John Roe, a talented 3D animator from Queensland and Bruce Brown, now tech support for Color Computer Systems are names you might recognise from *Professional Amiga User* magazine. Well, they both had their hands on beta versions of *Real 3D 2.0*. The reports were glowing.

John compared *Real 3D* and *Imagine* - a program he was very intimate with - to the difference between an F-18 jet fighter and a paper aeroplane. So, I kept waiting. Finally, the package turned up and in one of our ritual unveilings here at the editorial offices of ACAR, we ripped it open and did the old install and run (read the manual later) routine. Well, it looked great. You could even figure out a few of the options and controls without looking at the manual. The interface is configurable in more ways than you can imagine.

Installation and System Requirements

If you got one of the first batch in the country, you would have been frustrated to find the install script was faulty. Not something an experienced user couldn't overcome, and in fact, the version shipping now has been fixed. Nevertheless, it was a slightly worrying start as I wondered what else might be equally as unfinished. As it turns out, *Real 3D* is fairly solid and an update has already arrived fixing a number of earlier bugs.

The total installation takes up some 4.6 megabytes and the program itself is a massive 929K. We're talking one mean collection of software here. An accelerator card with math co-processor is a must

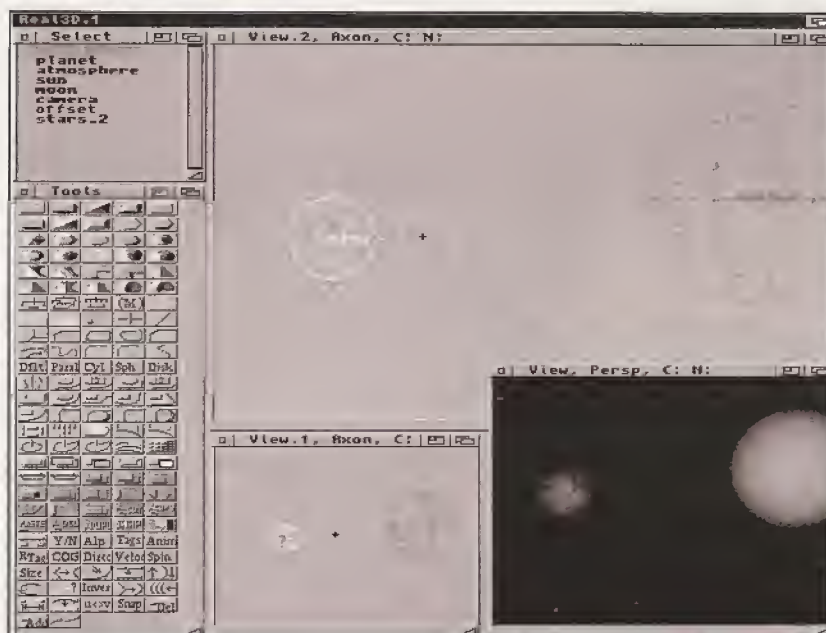
for this package - not to mention a generous helping of RAM. If you have an '040 machine - all the better. There's a special optimised version included just for you which is many times faster. If you have a Vivid board, keep it. Real Soft are promising a version to run on the Vivid card real soon now. Stay tuned.

User Interface

What would you prefer? Here, take a look at mine. Not your style? There's half a dozen other presets or make your own. That's right. If you're sick of being forced to look at one view (*Draw 4D*) or three (*Imagine*), you'll love *Real 3D*.

You can open many different view windows on your *Real 3D* screen, and you can open many screens too, each with its own settings. *Real 3D* also renders direct to many popular 24-bit cards - including OpalVision, the IV-24 and AGA machines.

Each window can be anything from a basic wireframe view to a full ray-traced image in whatever number of colours your machine/screen-mode supports. The different render modes offer high speed ray tracing fast enough to use during design as a view Window. On an A4000, creating the right look for your scene is a breeze at the speed this baby renders. Fast feedback has arrived and the way *Real 3D* is written, it can easily take advantage of faster CPU's and Amigas as they ar-



AMIGA 1200

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USING AMIGAS

Amigas let you decide how you use them. You can use the point and click system, which we call Workbench, or you can type commands on the keyboard as on MS-DOS computers. Most people prefer Workbench, it is easy to learn and great fun to customise. With Workbench you move the pointer around the screen with the mouse and click on little pictures called icons, these represent functions you want your Amiga to do.

All Amigas can run several programs at once: so you can print a letter, sort names and address lists, listen to some music and play with a paint program all at the same time.

You can also exchange data with MS-DOS machines simply by putting the disk in the drive. Workbench will even give you an icon to make things easier.

Most Amiga programs use a universal file format called IFF. This allows one program to use another's data, for example, a Word Processor can use a picture created in a drawing program.



Even the software you buy for your Amiga will be easy to use and great value for money, just like the computer itself.



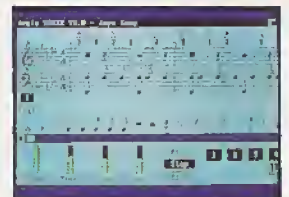
AMIGA SPECIALITIES

The Amiga is a great tool for work and pleasure but it excels at:

- Anything to do with graphics or video. Being video compatible means that the picture can be displayed on a T.V. or recorded on video. Having a graphics co-processor makes the action fast, whether you are reading through a large report or playing a super-action game.

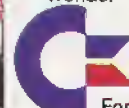


- Built in digital stereo sound on the Amiga gives you concert quality reproduction. With an inexpensive add-on you can even digitise your own audio and then experiment with it on the screen.



- With the addition of optional emulators, the Amiga can also run MS-DOS * or Macintosh * software - giving you the best of all worlds.



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rive. Make a change to your model and in draft mode, a new rendered view is rendered in one of my view windows on the A3000 in around a second.

The Manual

Real comes complete with a two ring binder and manual thicker than your average bricklayer's cut lunch. It contains some useful tutorials, although some annoying errors have crept into a few of the examples. It's well indexed and the reference section is good. The only way to learn this product is to read the documentation from start to finish, working through the various tutorial projects as you go. I would say it would take at least two solid weeks to get up to speed and you would always be learning new things and exploring the amazing potential of this package.

Organising Your Scene

Real arranges objects, object-properties, animation paths, you name it, in a hierarchy the same as most disk operating systems. For example, if you create a table, you might start with a solid rectangle called top and then create a level (like a directory) call legs. In this level you create the two legs and a cross member between them.

Now suppose you want to make the top marble and the legs wood. Simple. Load the included materials. Move to the level you want to apply, just like you would move around a disk using a directory utility. When you're in the right spot you add the material to that level and all objects in that level will become wooden, marble or whatever you like.

So naturally it helps to arrange objects in levels you want to animate together, that have similar properties or that are logically connected in some way. Once you get used to it, this method of organising your scene becomes second nature and you can cut and paste levels and objects with ease.

Fast Feedback

Where *Real* starts to run rings around other packages is the ease with which you can get feedback to changes. For example, you can have the materials window open and be altering the settings of

FACT CHART

Category: 3D Animation/Raytracing
Product: Real 3D
Current Version: 2.3
Publisher: RealSoft
Retail: \$899
Disks: 4
Memory: 3 Megabytes
System: 68020 or higher/math coprocessor
Hard Disk: At least 5 megabytes of space free (68040 included which is about 8 times faster)
Comment: A new standard
Distributor: Color Computer Systems
Telephone: (09) 375 3018

a particular material. You click the apply button, select a view window and hit Right-Amiga R to start it rendering, then you flick over to another window and keep modelling while *Real* renders the window with the new material settings. Halfway through the render you see it's not right, abort the render, select the materials window and make some more changes. All this is on one screen and all the action is visible at once. This program is fabulous.

I could write a lot more, but since this is our show issue and space is very tight I'll continue next month. In the meantime, my first impressions are that *Real 3D* will become the defacto standard for Amiga animation. Other platforms will see releases of *Real 3D* soon too, so it may also become the standard for all low end 3D animation. The interface is very powerful, the program has incredible animation power.

Yes, there are a few bugs, some of which have been fixed with the release of version 2.3 already. We had a few hassles importing DXF files and I hear getting a smooth camera path without using morphing camera positions is tricky. Nevertheless, at this stage I would not hesitate to recommend it. Watch for a full review next month.

Major Features

- Fully integrated editor and renderer taking full advantages of multi-tasking
- User customizable editor
- Open architecture for expandability
- Savable macros, which can be bound to keys or

user defined icons

- Undo with unlimited user definable depth
- Hierarchical object construction
- CSG (Constructive Solid Geometry) modeling
- Boolean operations
- Quadric surfaces
- Polygonal surfaces
- B-splines
- Large collection of creation tools for constructing complex shapes by combining primitives.
- Comprehensive set of free form surface construction tools including co-planar and orthogonal sweeps, swinging, rotation, cross-sectional building etc.
- 'Landscape' and 'Tree' fractal generators
- All necessary linear transformations are included
- Nearly one hundred non-linear free-form deformations available
- Comprehensive set of direct curve and surface manipulation tools through control and knot points
- Unlimited number of texture/material descriptions per object
- Transparency with physically correct refractions
- Texture mapping, Colour mapping, Bump mapping, Environment mapping, Shadow mapping, Reflection mapping, Clip mapping, Transparency mapping, Brilliance mapping, Mapping through user defined formulas
- Fogs
- Blurred reflections & refraction
- Procedural material/texture properties which can be customized by user definable formulas and programs
- Infinite number of light sources
- 'Sun-glow', 'atmosphere' and other non-homogeneous material effects
- Highly optimised ray tracing
- Soft shadows
- Depth of field
- Motion blur
- 9 level anti-aliasing uses adaptive over-sampling
- Revolutionary animation system based on the object-orientation theory includes: Morphing/key-framing of objects and materials, article animations, Inverse kinematic modifications, Skeletal modeling, Magnetism, Procedural animations, Allows all transformations and free form deformations to be animated
- RPL, a fully featured programming language, is used for: Expanding the program features and user interface, Describing macros, Scene description, Defining behavior for particles, Procedural texture and material handlers, Interactive object creation and manipulation etc.
- Fully customizable object and material data structures using tags
- Animated background images
- 'Matte' objects for combining ray traced scenes with backgrounds
- Well defined protocol to output devices allows, for example, graphics hardware manufacturers to write the software needed for using their products with *Real 3D*.
- Field rendering
- Alpha-channel support
- Autocad DXF import

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CD Quality Sound on the cheap!

Review: MicroDeal Clarity 16

Daniel Rutter, a mad keen sound freak since the dawn of time, examines the first of a new fray of cheap 16-bit sound samplers. Is the quality up to scratch? Maybe.

The Amiga's technology beat the pants off every competitor when it was released in 1985. Nobody could match the graphics, nothing could touch the sound. In recent years, some IBM technology has swept past the early Commodore product in both departments. Thankfully, the new Amigas have leapt ahead again in most respects. And all Amigas can still shift graphics around faster than any other PC and still come out of the box with better sound capabilities. However, the PC's SoundBlaster is looking more formidable as the months roll by. So what's the answer?

Our stock sound hardware has not changed since 1985. Four channel, eight bit and that's all. Now, there's nothing wrong with eight bit sound for many applications. Spot effects in games, background music for presentations and so on - with a treble boosting Sound Enhancer type gadget and a decent set of speakers an Amiga can get along fine. But eight bit sound is way down on broadcast quality.

You need 16 bit sampling for your computer's sound to be good enough for professional applications, and the

Amiga ain't got it unless you want to spend \$1000 plus on a Sunrise card.

A Note about Terms

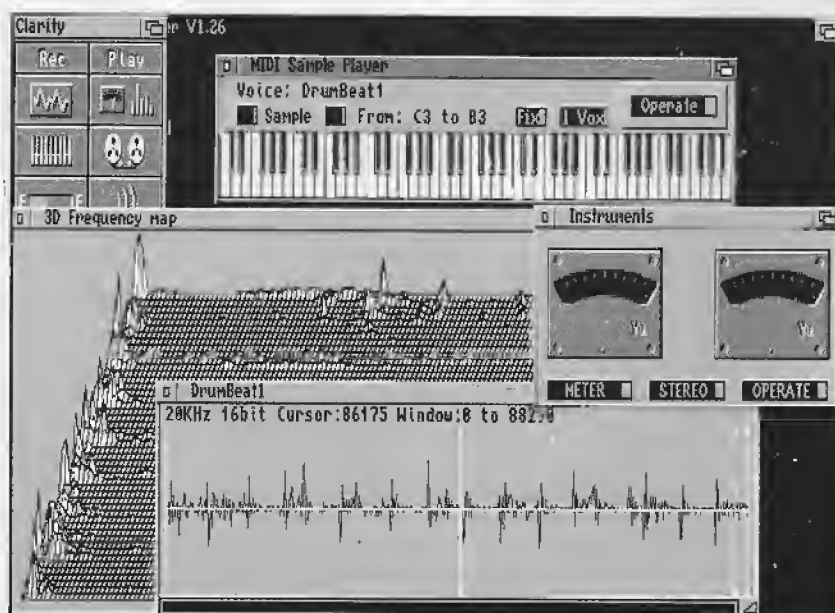
A brief moment to explain the terminology. Digital sounds are stored as a string of numbers, which represent the

position of the waveform at a given point. The more numbers, or samples, you have per second, the higher the frequency of the sound you can reproduce. The uppermost reproducible frequency is half the sampling rate, so 10,000 samples per second is enough to reproduce perfectly good speech and for full spectrum music you need more than 40,000.

Eight bit sampling uses eight digit binary numbers for the samples. This gives a maximum sample value range of 256 steps. This is, as I said, adequate but not great.

16 bit sampling, on the other hand, gives 65,536 possible steps, allowing waveforms to be reproduced with much better resolution. 16 bit sampling of one kind or another is used on CDs and their more recent cousins the Digital Compact Cassette and MiniDisc, and also in all professional digital sound applications - studios, synthesisers, and monster digital editing suites like the Turtle Beach and other PC and Macintosh based systems. All of these cost many thousands of dollars and need bodacious hard drives to work.

An alternative to full 16 bit sampling is 12 bit, which gives only 4096 different sample levels but is still a lot better than eight bit and has made the Amiga version, the Sunrise card, quite success-



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- Ami-Back Tools
- Ami-Back + Tools
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ful. But nobody would argue that for full industry standard operation you need 16 - which will be available as an option to the Sunrise soon.

How Does Clarity Add Up?

Microdeal's fairly cheap Clarity package certainly gives the right number of bits, but aside from that it doesn't really measure up. The hardware is great - a simple unit that plugs, as is the case with all external samplers, into the parallel port and has its own audio in and out jacks. Unusually, the Clarity also has a lead for the serial port, which means that since there's no pass through you have to swap plugs if you want to use printers, modems and so on. This is not a major hassle.

But it's the software that lets the Clarity down. If you've got 16 bit sampling you can do high powered editing operations, direct to disk stereo recording with CD quality and many other most impressive things - but not with this box, kids. In fact, the Clarity's software is not much more powerful than that included with any number of 8 bit samplers, although it does admittedly avoid the fairground poster appearance of many.

On Screen

The Clarity software operates on the Workbench and uses a modular design; you open only the windows you need. This is a novel approach which tends to produce a clutter of windows, but once you get used to it it works well enough.

Clarity's main editor offers the usual cut, paste, fade and mix features. You can sequence samples in a simple one-track arranger, or play them back using a MIDI keyboard plugged into the MIDI ports on the back of the unit. Samples can be recorded up to 44kHz (better than CD) in mono on a 68000 machine, and up to 32kHz in stereo. The faster your processor, the faster you can sample.

Which brings me to a whinge - the software's not very well coded to deal with machines of different speeds and

bears all the hallmarks of something rushed out the door to meet a production deadline. There's a horrible little menu item called "fast Amiga" you select to tell the machine you're running faster than 68000; any coder could have made the program figure that out for itself, and even after the menu item's been selected some features still stuff up.

I've had the program hang on me more than once when I tried to use the spectrum display, and on a 3000 at the ACAR office the VU meter display never worked at all. There's no excuse for this.

"play back police sirens and gunfire at two in the morning"

And there are many features which are obvious toys. You can do FFT (Fast Fourier Transform) analysis of a sample or part thereof, which produces a groovy little grid-graph thing which is of absolutely no use to man or beast because it's totally uncalibrated and can't be rescaled or further analysed.

Likewise, the sequencer's one track design is pointless - the example sequence included with the package sounds as if it were assembled by primary school students.

Bells and Whistles

You can add echo, reverb and flange to a sample, and these are not too bad. The reverb is, as usual, just a modified echo and doesn't bear comparison with a professional digital reverb unit. You can also add chorus and distortion, but these sound really terrible.

And the MIDI control is likewise just a gimmick; all you can do is assign different samples at different pitches to every note on the keyboard, which is a much sillier method than assigning one sample to each MIDI channel, which is how any professional system does it.

Fortunately there is provision for sending samples to or from sampling MIDI machines, so the Clarity's short-

comings can be made up for by external hardware. If you have a keyboard that can play samples but not record them, the Clarity's a cheap way to feed it sounds.

Clarity can only play one 16 bit sample at a time. It will do more, but only through the Amiga's sound outputs, which rather defeats the purpose since these are eight bit. Interestingly, the Clarity manual says playback through the Amiga channels is 14 bit, which is news to me and to Commodore. It is not possible to play anything better than eight bit sound through the Amiga's audio channels, so I've no idea what the "14 bit" thing means.

On the Plus Side

To be fair, Clarity's sound quality is great. With good cabling and a good sound source and the input level set correctly, background noise is very low and audio definition is brilliant. The hardware works really well. But the software just doesn't back it up.

In summary, Clarity 16 is, like many samplers, a great toy. You can make use of it if you want to sample for an external MIDI device. It'd be good to make super high grade samples for conversion to 8 bit for your presentation, game or whatever.

And you can indeed play silly at home with a sampler for hours on end - 16 bit makes it even more fun. Record your favourite movie one-liners; search your heavy metal albums for backwards messages about cannibalism; play back police sirens and gunfire at two in the morning for the benefit of the neighbours; slowly and painfully remove all the scratches from your old 78's; frighten the cat with a chorus of Rottweilers.

But without the power that normally goes with 16 bit digitising, the Clarity 16 is no use at all to the traditional high grade sampler market. If GVP or someone else come out with software which loses all the silly bugs and supports record to disk and better MIDI, this sampler could really go places. As it is, though, it's still one of the best toys I've seen in a long time.

Dual Personality

Running MS-Dos Software on your Amiga 2000/3000/4000

George Kimpton has always resisted the urge to buy an MS-Dos computer. So, every so often we send him out to test the latest in emulation hardware as a quiet reminder what he's missing out on. Lately, George has been tinkering with the Golden Gate 486.

The 486SLC is the latest in a range of MS-DOS bridgeboards from Vortex for the Amiga. Previous boards which I have reviewed are the ATonce Plus for the Amiga 500 (*Professional Amiga User* Dec/Jan 1992) and the 386SX (ACAR October 1992).

The 486SLC board has been released in response for demands for a faster bridgeboard and to keep pace with current developments in the MS-DOS area. This board uses the low power SLC version of the faster 486 CPU now being installed in MS-DOS laptops.

System Requirements

System requirements are the same as for the 386SX, i.e. Workbench 1.3 or 2.0+, 1 Meg of RAM, a single floppy and a hard drive, all of which can be shared with the Golden Gate. While tests have shown it works quite happily on Amiga 2000, 2500 and 3000 models, I did not have the opportunity to test it on an Amiga 4000. (*Apparently Commodore cannot give Australia's only Amiga magazine a machine for review, as they are selling faster than the good lads at head office can ship the beast. However we have been promised a long term loaner real soon now, right? - Ed*)

For flexibility you can still install your own MS-DOS drives including a high

density drive with a capacity of up to 2.88MB. This will require the installation of the optional floppy controller chip. Provision is also made through a high performance on board IDE controller to install Golden Gate's own hard drive with up to 24 partitions.

Again I would emphasize the need for large hard drives, as the more I move around in the MS-DOS area the more I become aware of the massive size of MS-DOS programs. At least 100MB or even larger would be well worth considering especially if shared with Amiga programs. *Corel Draw*, MS-DOS and *Windows* alone will chew up around 60MB on their own. A disk compression program such as *Superstor* would also be a good investment as it virtually doubles available disk space. Be warned though, MS-DOS and *Windows* must not be on the compressed partition unless you want problems.

To check hardware compatibility, a floptical drive, CD ROM drive and a Syquest removable hard drive were tested. All worked

without a hitch. The internal ISA bus is fully compatible with LAN controllers and EGA/VGA graphics boards. All of our tests used a VGA Graphics board and a Sound Blaster Pro board mounted in the PC slots. The VGA board is automatically sensed by the Golden Gate and Vortex now have their own optional external monitor switcher box which eliminates the need for two monitors.

Unfortunately there is still the need to disable the cache if using a Commodore accelerator board. This is easily achieved with a PD program called *CPUSet*. Interestingly enough, with a GVP G-Force 040 it wasn't necessary to disable the cache.

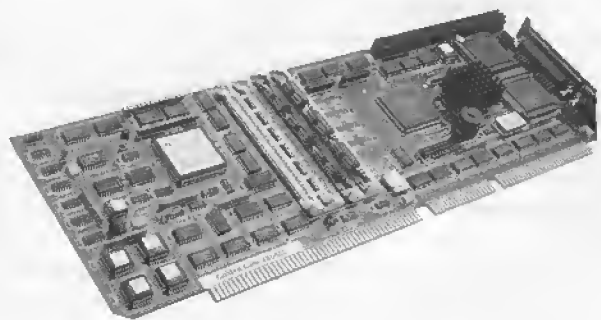
Performance

Benchmark tests using *Norton SI* gave relative speeds of 44.8 for the 486SLC and 26 for the 386SX against a standard XT. While the speed increase is not quite what Vortex claim (up to 2.4X) this could easily be attributable to the system configuration at the time of testing.

Conclusions

On the surface there is little apparent difference between the 386 and the 486 but during testing the increased speed and performance were immediately evident. The 486 with optional maths coprocessor and 8MB of RAM installed is no slouch, even with vector graphics and CAD programs which are normally tediously slow in redrawing the screen.

The 386SX board previously reviewed retails at \$999 whereas the 486SLC is \$1599. Optional extras are: Floppy Controller Chip (\$49), the Maths Co-proces-



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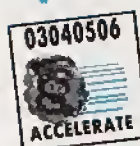
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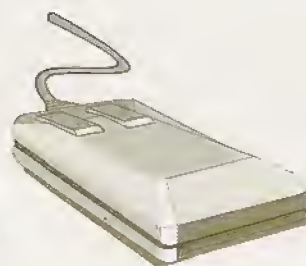
While price may deter some from the faster 486SLC, it is well worth the extra when working with the newer MS-DOS programs operating in Windows mode. Many upgrades of old software along with new programs coming on the market now are designed around the 32 bit 486 architecture for best performance.

The Golden Gate 486SLC is a very professional unit. I have no hesitation in

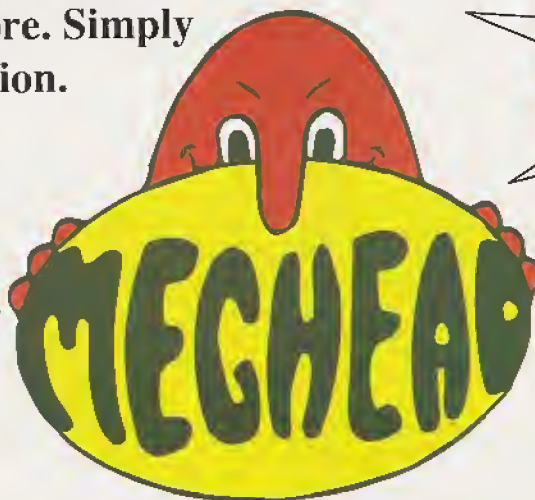
recommending it for anyone who requires a high performance MS-DOS IBM compatible to work in tandem with their Amiga.

(Whilst there is no doubt that slotting a bridgeboard into your existing Amiga is a far more elegant solution than purchasing another computer - not to mention the ease of file exchange and hardware resource sharing - one cannot help but wonder why the price of this board is so high when compared with the option of acquiring a separate MS-DOS system. Perhaps it will go down in time. - Ed)

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We'd simply call it the best Amiga Word Processor. But if after using it, the experts insist on calling Final Copy II the best Word Publisher as well, we're not complaining!

Wildlife **Report**

The Tiger



Large striped cat of Asian jungle and mountain regions. One of the largest of the big cats, the tiger is 3-4 m. (10-13 ft) long, including a tail 1 m. (3 ft) long, and weighs 227-272 kg. (500-600 lb.). Both sexes are immensely strong, enabling them to bring down and overcome animals the size of buffaloes. Their main prey is deer, antelope, wild pigs and bushbucks.

Tigers spend the day sleeping or resting and emerge at dusk to hunt. Males are usually solitary animals, except during the breeding season. Each male marks off a territory of from 65-650 sq. km. (25 sq. miles), which contains several females and which he defends against other males, marking the boundaries by spraying a mixture of both his urine and scent.

Lacking the stamina for a prolonged chase, tigers rely on their striped markings to conceal their movements as they silently creep up on their victims before making a sudden rush from behind. They kill by first knocking the animal down with a blow of the forepaw, or pulling it down with the claws, then suffocating it with a powerful bite at the neck or throat. Tigers swallow meat in large chunks, using their teeth to cut rather than to chew, and eating up to 22.5 kg. (50 lb.) of meat in a single meal.

Tigers once ranged all the way from China to Turkey, but today their range are largely confined to India and South-east Asia, with smaller populations in China, Siberia and Turkistan.

Region of Habitat

*Final Copy coined the phrase "Perfect Printing on any Printer".
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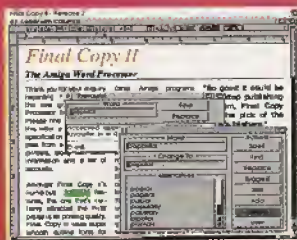
Created in Final Copy II and printed on a standard 24-pin Citizen, it shows a small number of Final Copy II's features: Smooth Scaleable Outline Fonts, Multiple Columns, Drawing Tools for Boxes, Borders, Shadows, Lines and Arrows, White-Out Text, Text Printed over Graphic Images, Text Obliquing, Auto-Flow Text around Graphics and of course, Import of Colour and Mono Graphics Pictures.



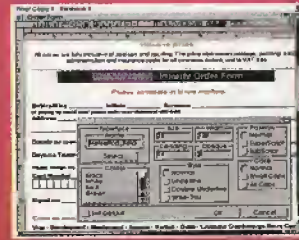
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Final

Word Publishers go beyond simply producing normal letters and documents (at which Final Copy II naturally excels) and progress into a world where how the whole document looks is just as important as what it says. Admittedly, this can be achieved with Desk Top Publishers, but they can't easily be used as Word Processors, especially when a good looking letter needs creating quickly - they're far too cumbersome. This is where Final Copy II offers the perfect balance between the two requirements. Ease and speed of use, combined with complete control and perfect final printed presentation.



Document creation is so simple with 28 On-Screen Buttons for routine formatting and navigating commands, like Auto-Hyphenation. With true WYSIWYG display, you can even edit whilst your pages are magnified up to 400% (or reduced). Long documents are supported with Title/Master Pages, Style Sheets, Left/Right Page Binding Offset and Auto Numbering. Because your text needs to be perfect, the British-English Collins Proximity Speller combined with the Thesaurus (for that added inspiration) help you to produce the precise, printed page.



Compugraphic, Adobe Type 1 PostScript or Nimbus Q PostScript? If you want lots of fonts, you can have lots of fonts! Final Copy II can use thousands of superior Adobe Type 1 or Nimbus Q fonts (the same as those used on professional publishing systems). Both these types are PostScript fonts, but unlike all other Word Processors you don't need an expensive PostScript laser to use them! Final Copy II will print them on PostScript lasers, or any graphics capable printer. This includes the dot-matrix or ink-jet you probably already own. Even if you have your own Compugraphic® font library you'd still like to use, Final Copy II is fully compatible, outputting to any graphic printer. Final Copy II is unrivalled in its range of fonts supported, and as you can see here, you have complete control over text formatting. When using the outline typefaces included, or any additional fonts, they'll output perfectly - no matter what size they're scaled to - with absolutely no jaggies! Opening multiple documents also allows editing whilst printing in background mode (free memory dependent).

Compatible with all Amigas from A500 to the latest A1200/A4000 ranges with either a second floppy or a hard drive. A minimum of 1Mb. of available free RAM is required (A600 hard drive - 1.5Mb.) however, as with all advanced graphical programs, extra memory (eg. 1.5/2Mb. - the more the better) will be required to exploit all features fully.

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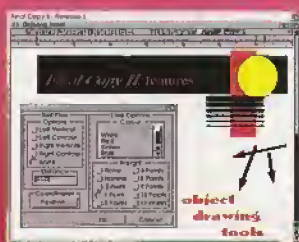
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CopyII

Release 2.0 (AGA)

Complete control over how your documents look, now you have it! Final Copy II incorporates: On-Screen Drawing Tools for generating boxes, borders, and lines or arrows at any angle, Multiple Newspaper Style snaking columns, combined with the unique ability to print the same PostScript quality outline fonts - on absolutely any printer in portrait or landscape. These all mean that no matter what you may have thought, no other Amiga Word Processor has all the capabilities that Final Copy II users now simply take for granted!



The almost endless list of features includes On-Screen Object Drawing Tools (no more importing of borders from drawing packages to frame graphics or reverse-highlight text) with selectable rulers to aid precise positioning. Text Auto-Flows around graphic objects and imported pictures, which can be placed anywhere, scaled and cropped, with no loss of printing quality. Text can also be printed actually over graphics (refer to "The Tiger" heading on our document). No other Word Processor for the Amiga offers all this. (*Compugraphic fonts require Kickstart 2 and Workbench 2.1 or later, with Final Copy II. They will not output on PostScript printers from any Word Processor - and would always be our second choice. ‡All fonts used in Final Copy II can print to the highest resolution that the printer will output).

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If you'd like to know who's also chosen Final Copy, Commodore specify it as an option with some of the most powerful Amigas available in the United States. What better recommendation could you have?

Feature	Wordworth 2	Final Copy II
Fonts and Printing		
Compatible with Standard Amiga Workbench 2 Compugraphic Fonts	YES	YES, But would Suggest use of Better PostScript Fonts
Compatible with Standard Adobe Type 1 and Nimbus Q Scalable PostScript Fonts	NONO	YES/YES
PostScript Font Outlines on all Printers	NO	YES
Maximum Number of PostScript Fonts	Limited to a total of 35	Infinite
Download Extra Fonts to PostScript Printer	NO, Can't download extra fonts	YES, Automatic
Landscape (Sideways) Printing on all Printers	NO	YES, Automatic
Reclaim Printing Resolution (Quality) of Scaled (Reduced and Enlarged) Graphic Images	NO	YES, Same High Quality when Reduced and Enlarged
Print any Text or Graphic in Colour	YES	YES
No. of Colours Printed in Imported Pictures	Limited by Screen Mode Used	Output as Original Image
Graphics Printing (HAM & IF IBM)	Good if Graphics not Scaled	Always Best Possible
Text Width (Compress and Expand)	NO	YES
Variable Text Obliquing (Slanted Text)	NO	YES
Both Positive and Negative Attributes	NO	YES
Box, Rounded Box, Circle, Oval, Line, Variable Border & Arrow Drawing Tools	NO	YES
Graphics		
Crop (Trim) to Size Imported Graphics	NO	YES
Supports A1200/4000 AGA Chipset	YES, 256 On-Screen Colours	YES, 256 On-Screen Colours
Create Border around Graphics and Pictures	NO	YES
Editing and Formatting		
British-English Spelling Checker	YES, Collins Proximity with Legal & Medical Supplements	YES, Collins Proximity with Legal & Medical Supplements
British-English Thesaurus	YES, Collins 826000 Synonyms	YES, Collins 826000 Synonyms
Page View Magnifications and Reductions	One Fixed Print Preview	7 Variable stages - 25% to 400%
Edit Document while Magnified or Reduced	NO	YES
Search & Replace (150 words in 9000, 7 Pages)	61 Seconds (On Amiga A1200)	7 Seconds (On Amiga A1200)
Index and Table of Contents	YES, Automatic	NO, Requires Manual Entry
Multiple Newspaper Style Snaking Columns	YES, 2 to 32	YES, 2 to 6
Style Sheets, Master Pages, Title Pages	NO	YES
Uses Standard Amiga Clipboard for Cutting & Pasting to and from Different Applications	NO	YES
Small Caps Typographical Control	NO	YES
Conforms to Commodore's Amiga Standard 'Look & Feel' Guidelines	NO, Non Standard User Interface	YES
General Features		
On-Screen Maths (Column Addition)	NO	YES
Import ASCII Text from any Word Processor	YES	YES
Registration, Upgrade and Support	YES	YES
Free Memory Required	1.5Mb. Minimum More Recommended	1Mb. Minimum More Recommended
Ongoing Technical Phone Support	Contact Distributor	YES, Free of Charge
Recommended Retail Price	\$269.00	\$199.95

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Keeping Account with Home Accounts 2

George Kimpton is not one to let even a dollar slip. So, it seemed only fair he review this product, as until now he has been spending a lot of time balancing cheque books and working out his tax. Does this program make it any easier?

Keeping accounts the way accountants like them has always given me the horrors. Even after a course at TAFE some years ago I still get confused by debits, credits, ledgers, double entries, reconciliations and all that stuff. I usually try to keep track of things these days on a *Maxiplan* spreadsheet but even that can get confusing, particularly when it comes to tax time. Consequently when our esteemed editor Andrew asked me to look at Digita's *Home Accounts 2* package I approached the subject with some trepidation.

What a pleasant surprise *Home Accounts* was. Gone is the need for all those cash books and little bits of paper where you tried valiantly to balance ready cash with the bank statements and reconcile uncashed cheques. You can see at a glance just where the money has gone, what bills to expect on a regular basis and how your budget is holding up, all with the click of a mouse.

Installation

Home Accounts 2 comes with a well documented manual and one disk. It can be run from the floppy or installed on your hard drive. There is no installer icon for the hard disk but installation is

just a matter of drag and drop the program icon. You may strike a small problem though if you are one of those people who do not read the Readme File on the floppy. The manual does not tell you to install the *Home Accounts* fonts when using a hard disk. Instructions are also given on the Readme File for changing printer drivers on the floppy if you do not use an Epson X.

System Requirements

While no mention of the Amiga 600, 1200 or 4000 is made, I think it is safe to assume that *Home Accounts* will run

on any Amiga with Workbenches from 1.2 upwards. 1MB of RAM is required with the proviso that file capacity is limited only by the amount of RAM available. An internal battery operated clock, while not recommended in the manual, is a must for this type of program to keep track of dates of transactions.

Setting Up

Home Accounts allows you to set up a series of accounts such as Savings, Cheque, Credit Cards, Investments etc. which, once created, are accessed by Digita's HIP (Human Interface Protocol). HIP is Digita's own graphical environment which integrates the desktop and automates the way you work in a predictable and consistent manner. One thing is for sure, it certainly seems to minimise many of the hassles normally encountered by a novice accountant.

Preferences settings allow for auto saving of file changes and updates and trashcan emptying. I can't see the point in auto emptying the trashcan in fact it could be downright dangerous. Screen resolution and colour settings are also adjustable, along with the choice of whether to stack or tile multiple screens or to have a desktop clock and a screen saver.

Creating Files

With new files you have a choice of when your financial year will start. This

Home Accounts2 Version 1.02 ©1991 Digita International

DATE	TYPE	* REFERENCE	DEBIT	CREDIT	BALANCE
Access card Opening balance : 0.00					
03/03/1993	PTRL	* petrol	12.96		-12.96
11/03/1993	PTRL	* petrol	14.77		-27.73
17/03/1993	PTRL	* petrol	8.93		-36.66
24/03/1993	PTRL	* petrol	17.41		-54.07
Natwest Current Account Opening balance : 425.98					
01/01/1993	SAL	* Salary		312.91	738.89
05/01/1993	CARL	* loan for mini	51.37		687.52
15/01/1993	SAL	* Salary		312.91	1000.43
15/01/1993	TRAN	* cash transfer	60.00		940.43
29/01/1993	SAL	* Salary		312.91	1253.34
05/02/1993	CARL	* loan for mini	51.37		1201.97
12/02/1993	SAL	* Salary		312.91	1514.88
15/02/1993	TRAN	* cash transfer	60.00		1454.88
26/02/1993	SAL	* Salary		312.91	1767.79

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is automatically preset at the current month and year but can be adjusted to suit your needs. Be careful here, as there is no way to change it once set. File or account formats can be created from scratch or copied from a previous period. This allows consistency of formats for comparisons and can save a lot of work setting up new accounts each year.

Once the basic file is created you are returned to a Workbench type icon environment which includes an on line Help icon or a hot key interactive Help access to assist in sorting out any problems you may have. Accessing of individual accounts is by double clicking on the appropriate icon.

An excellent tutorial in the manual takes you step by step through this setting up procedure and the operating of all your accounts. It shows you how to set up regular payments such as house and car loan repayments and cash transfers between accounts. (These regular

payments will need to be reconciled with your bank statements and *Home Accounts* provides for this.)

Budgets for each month can also be set up and compared with actual payouts to see how well you have been managing. Pop up screen warnings can be linked to individual accounts to warn when pre-determined maximums or minimums are reached to allow for transfers of funds or whatever.

Data Entry

All data entries are through requesters which ensure all necessary data is entered in the correct format for each transaction. These data entries require the use of predetermined codes of up to four letters, which you customise yourself to reflect the different types of transactions.

These codes allow the computer to sort and recognise each transaction when balancing accounts or preparing reports.

Should you forget the code for a particular type of expenditure during a data entry, the F9 hotkey will display a list of the codes. Clicking on the appropriate listed code automatically enters it in the active requester. Markers are also available to indicate just who spent the money.

Apart from remembering the entry type codes, adjustment to or entry of data in any account is simplicity itself with the Add or Amend commands (hotkeys provided). Changes to transaction entries is also possible by double clicking on the entry itself. This brings up the amend requester displaying the existing data which can then be changed.

There is even a facility to access and split a previous entry for more detail. An eight line notepad is also available through the F10 hotkey for extra detailed information about the entry or account itself. The only problem with the notepad is that it appears to be only accessible during an entry "add" or

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"amend" action. It is just too bad if you only want to read it.

Cheque Accounts

Cheque numbers in your cheque account are automatically incremented to match your cheque book once the first number is entered. In fact a lot of thought has gone into data entry in *Home Accounts* in an effort to make it user friendly. This is especially noticeable when changing an entry, you just click in the appropriate box in the requester and type. There is no need to delete data as the program automatically clears the previous data as soon as you start to type.

Investments

The investment account is just a listing or portfolio of shares and their current value and not things such as term investments or share movements. This

is one shortcoming as there is no real provision for keeping track of share changes or term investments and interest. The contents of the Investment account contents are however included in reporting your net worth and assets. Relevant information about the shares can be entered in the notepad for reference.

Reports

Once the accounts are set up a range of reports are available including, what your budget is, how it is coping, regular transactions, a summary of all accounts, individual account statements and income and expenditure sorted into categories. There are also reports on your budget's progress and your net worth taking into account your assets and liabilities. I have one complaint here, there is no way to back up through a long report to compare or check something that has rolled off the top of the screen unless you do a printout.

Accessories

Finally we are provided with a rather obscure game to relieve the tedium of account keeping and a calculator. The calculator can be dropped over our accounts to enter data to check balances or other data. A variation of this calculator can be used for "what if" calculations on loan interest repayments. This could also be useful for determining credit card payments.

Conclusions

A surprisingly user friendly and useful accounting program that will suit most of the needs for keeping track of the home finances. It could also easily suit the small home hobby business.

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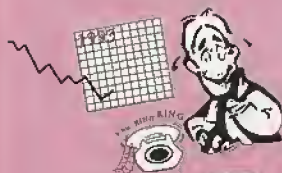
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4 into 32-bit RAM through special hardware built into the
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Tutorial

Warping the Dice with Deluxe Paint

Graham Bowden continues explaining how to make Deluxe Paint sing, which we're told is very difficult considering it is a paint program. Nevertheless, boot your copy now and follow the bouncing pointer to animated success!

In our last tutorial we dealt with constructing an animated 3D cube. This month we'll experiment a little with our cube to see if it's possible to spawn some special effects. How does a realistic orbiting dice sound? Weird? Well yes, but the inspiration came from an even weirder source in the person of my good neighbour.

He desperately wanted a circular driveway. Now that he's got one the fool can't get out, but watching him orbiting all day lit up one of those little light bulbs in my creative psyche. True story? You work it out. Meantime a funky bouncing dice or a rotating dice with animated faces or perhaps even a pair of rotating dice forming the simulated surface of a spinning planet may also get a mention?

I'll also briefly cover another unfortunate glitch - no, maddening would be a better term - I'll look at another maddening *Deluxe Paint* glitch.

The effects covered this month were the result of experimenting with various ideas, all of which can be used equally well with any brush. Perhaps, for instance, substituting an orbiting ball with a suitable surface for the orbiting neighbour would create an excellent moon. Let's examine the mechanics of the effects.

Theory

First the orbiting dice. It's obvious to even the most casual observer that a circling object, when viewed edge on, has a regular pattern in its appearance as it travels around its orbit. It appears

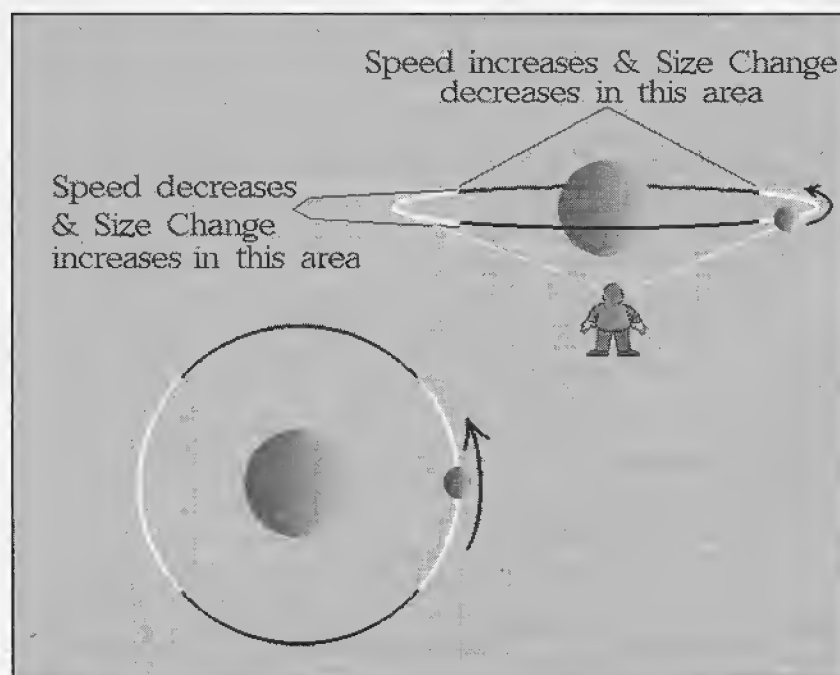
large when at its nearest point to the watcher, moving, let's say, from left to right, while gradually diminishing in size as it recedes around its orbital track.

As its movement gradually slows, then reverses - now moving right to left - size continues to decrease only to again enlarge as it approaches the extreme right hand end of the orbital track where its speed again decays and reverses to become a left to right movement as the orbit is completed. Figure 1 will help you to understand this movement.

Fortunately for we DPainters, this cyclic movement can be quickly and easily simulated with *Deluxe Paint 4* by dint of a little deft use of the "Move" requester. The first step is to pick up your dice as an anim brush. From the Anim menu select "AnimBrush/Pickup.." and grab the dice as a brush.

Don't forget, when boxing in an animbrush leave enough space around the object to allow for its movement between frames. In this case the die effectively expands and contracts as it rotates so give yourself some space to allow for this. The next step naturally is to save the animbrush.

Figure 1



Step One

Next we'll construct a new animbrush, which will deal with the change in size as the orbiting brush curves away from our viewpoint. I'll assume your rotating dice animbrush has 36 cels and that you are comfortable with the mechanics of the Move requester. The tutorial in the December '92 issue of ACAR dealt with this requester if you need help.

Because changing the size of our animbrush involves moving it along the screen's Z axis, it is essential that its handle be exactly over perspective centre when the brush is first clicked down. Provided the position of perspective centre hasn't been fiddled with since last booting up, turn on the co-ordinates (Keyboard Shift-V) and if the screen is in Lo-Res mode click the brush down when the co-ordinate numbers read 160 127. If in Hi-Res the numbers will be 320 256.

If the position of perspective centre is in doubt, try this. Enter perspective mode, press the inverted comma (") key once and place the resulting wire frame brush outline directly over the onscreen cross hairs which locate perspective centre, then click it down. Whichever method is used to locate and stamp the brush down, remember to finish off by pressing Shift-7 on the keyboard to return your animbrush to cel one.

A Moving Dice

Okay, let's move it. First clear all 36 frames of animation to give a clean screen to work on. Don't worry about the brush that's just been stamped down, *DPaint* will remember its position. Now call up the Move requester and change the Count: to 18 and the Z Dist: to 150 before clicking the Draw button. This action moves the brush 150 pixels away from you, the viewer, over 18 frames of animation finishing on a blank screen.

Don't touch anything, just call up the Move requester again and change the Z Dist: to -150 (that's Minus 150) before once again clicking Draw. The brush now moves back to its original position or size, call it what you will, through the second 18 frames. Pick this new animation up as an animbrush and we're ready for the next step.

Figure 2 is the key to the final steps in the orbit exercise. The numbers in the X distance, Ease-In: and -Out: and Count: boxes need to be set up for each of the three stages of movement. First click the brush down somewhere near the centre of the screen, then tap keyboard "7" and "u". This returns the AnimBrush to cel one and removes the brush image from the screen respectively.

Hit Shift-M to call up the "Move" requester and set the frame Count: to nine frames. Why nine? An excellent question with a surpassingly simple answer. We begin our movement you see, with only the first quarter of the animation's orbit. With 36 frames in all, nine frames make up a quarter, it's simple.

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Flash Back

Recall now if you will any earlier comments on the variation in speed as the brush reaches the extremes of its travel. To allow for this gradual decrease in speed for the initial quarter of the orbit the Ease-In: (or decelerate) box is set to four frames. The effect of this setting is to have the brush moving at full speed over the first five frames before gradually decelerating over the final four.

As to the distance travelled, the X Dist: can be set to any figure so long as the orbit doesn't disappear off screen. Somewhere between 100 and 150 seems a fair figure on a Lo-Res screen and as can be seen from Figure 2, I've chosen 120. Click "Preview" to see that the brush is going to move the way you want, and if all is okay click "Draw" to begin the orbit. Once again the action will finish up on a blank screen, so don't touch anything, just call the "Move" requester up again.

Because we're now dealing with the "back" half of our brush's movement set the Count: to 18 and the X Dist: to -240 (or twice whatever X Dist: you originally chose). This time the brush will be accelerating from the right extreme of its orbit and decelerating at the left extreme so set both Ease-out: (Accelerate) and Ease-In: (Decelerate) to four.

Click Preview and Draw as before. Once *DPaint* has finished drawing, recall the Move requester yet again, set Count: to 9, X Dist: to 120 (or whatever) Ease-Out: to 4 and Ease-In: to zero. Click draw and this time, when the drawing has finished, the animation's ready to play.

If you were to now grab this animation as an AnimBrush it could be used to create a spiralling object. I'll leave you to work that one out while I compose a dissertation on a funky bouncing dice. No, no you cretins, I won't be on the dice, the dissertation will be about the dice. It's an interesting little effect really and uses a morphed, solid coloured nine cel animbrush which is stamped down over our 36 frame ani-

mation using the yo-yo setting from the animbrush settings requester. Got all that? Great, it also employs anim filling using the "Wrap" setting from the Fill Type requester and finally anim painting using the "curve" tool. Here's how it's done.

Morph Me Please

Using the filled ellipse tool, draw an oval shape similar to one of the original brushes shown in Figure 3. Pick it up as a brush and press Alt-N to store it in memory as a spare brush. Press z to rotate the brush ninety degrees. It's important you use lower case z here because upper case Z is used to resize a custom brush. So rotate the brush and hit Alt-m to morph this brush into the shape of the spare.

When the morph requester appears type in Number of Cels:9 and hit OK. With this new animbrush hanging off your mouse open the animbrush settings requester - it's under the Anim/Animbrush menu - and click in the yo-yo box as shown in Figure 3. Now it's off to the move requester and set all boxes to zero. All that is, except the Frames: box. This should be set to 36. Click on Draw and watch the animbrush yo-yo back and forth over the anim frames. This collection of warped ovoids now need to be anim filled by wrapping on our good ol' dice.

So load the dice animbrush, open the Fill Type requester and select Wrap from the top row of buttons. Oh and by the by, if the palette's been changed and the custom brush has taken on the hues of Joseph's Technicolour Dreamcoat, try selecting Brush/Remap from the Color menu. If it's not important to keep the current screen colours as they are then select Palette/Use Brush Palette, again from the Color menu.

Now for the AnimFill!

Now we'll animfill the prepared shapes. With the Fill tool selected and Fill type selected to Wrap, press Shift-1 to move to frame one of the animation, hold down the left Alt key (this enables Animpainting) and click down in the

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Carsmear by Mike Vunck

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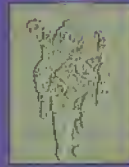
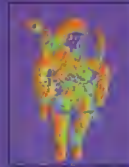
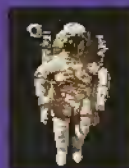
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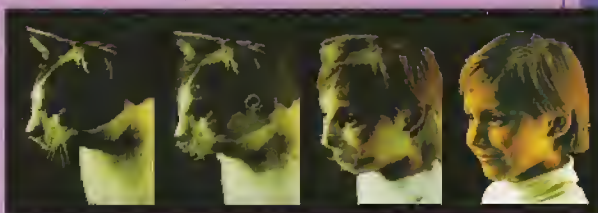
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Education Column

by Stan Nirenberg

Back to Basics

The title says it all. This package falls very much into the genre of traditional educational software that one has come to expect - not particularly exciting, providing instruction and drill in what is considered the basic elements of learning, arithmetic and English. *Back to Basics* provides tuition in addition, subtraction, multiplication, division and spelling.

Although not the most interesting program around in terms of captivating students' interest, the package is competent and, best of all in these recessionary times, very economically priced for a commercial offering. *Back to Basics* is published by Lascelles (a New Zealand company) and distributed in Australia by Don Quixote Software (076) 391 578. The recommended retail price is a reasonable \$39.95.

Unpacking

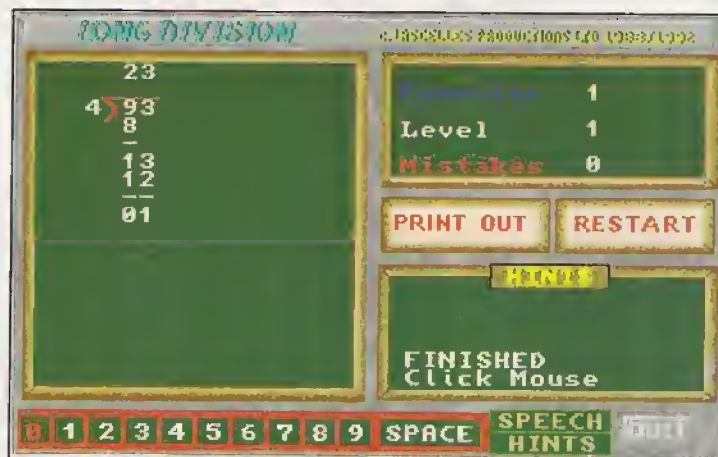
The software comes on two disks and is accompanied by a short (16 page) manual which covers starting the software on the Amiga and operating all aspects of the package. The software is not copy protected which means that you can back up the disks. It should also mean that the software is hard disk installable.



Subtraction

BasicsI. There you will find icons called LongMultiplication, Tabletest and LongDivision which must be selected and dragged into your drawer on the hard drive. If you have Workbench 2 or higher, you can see the files that do not have icons. On this particular disk, you need to select Divscreen, Multscreen4 and tablescreen and drag them into your drawer on the hard drive.

If you have Workbench 1.3 or earlier,



Back to Basics division

Unfortunately, no utility or instructions are provided for this. The good news is that with a little bit of effort it is possible to copy the program onto a hard disk and load it from Workbench when required. The following instructions should prove useful to those who buy the package and own a hard drive.

Installation

The first step is to create a new drawer on the hard disk, giving it any name you desire. Next, open the floppy disk called

you will have to use the CLI to copy these files from the floppy disk onto your hard disk (see your Amiga manual for this).

From the disk labelled BasicsII, copy the files marked Addscreen, Subtractscreen, Spellscreen as well as SayNSpell, LongSubtraction, LongAddition and the drawers marked "level" and "mixed". If these hidden files are not copied, the software will fail to work.

Although I find that running programs from the hard drive is convenient, in this case it is not particularly necessary as the software works relatively quickly from floppy disk. The software is very much Workbench friendly and therefore can be operated with other programs running in the background. In fact, all five modules must be launched from Workbench.

The program is easy to learn and use. The instructions are adequate, although I found that it still took me a couple of goes at the program before I came to grips with how to run it effectively.

The software is controlled by either the mouse (numbers are chosen from a table) or the keyboard. In this instance, I found keyboard control was easier and quicker, using the keypad on my Amiga

500 to select the numerical answers. The spelling module, of course, requires the use of the keyboard.

Arithmetic

The four arithmetic exercises (addition, subtraction, multiplication, division) are similar in operation. After selecting the type of drill that is to be carried out, the program asks you for your name. It then uses the Amiga's built in voice synthesizer to welcome you to the program. Next, the user is prompted to choose one of three levels of difficulty. The higher the level, the more numbers are provided for the required operation. For example, in the long addition module, level one covers only the numbers 0 to 9, level two uses numbers up to 99 and level three uses numbers up to 999.

Ten exercises are presented in each session. As the exercise progresses, the level of difficulty increases. In the addition module again, the exercise set will start with the user having to add three rows of numbers, progressing to five rows of numbers towards the end of the set.

Two levels of help are provided in each of the modules: speech and hints. With both options turned on, the child is effectively instructed in the steps required to perform the exercise. In the addition module, the child is first instructed to add the first column and then prompted to key in the sum of the first column.

If the sum is more than nine, the child is instructed to carry a number into the next column. The process is repeated until the whole exercise is completed. The use of both hints and voice (to instruct) is recommended until the user becomes familiar with the program. As the drill becomes more familiar, the student can be encouraged to work without the use of spoken instructions and hints.

At the completion of the set of ten exercises, the child is congratulated on completing the task and is given a score showing his error rate. This is followed by a test comprising three questions which must be written down on paper (or printed) and answered without any assistance from the computer.

I was impressed by the way

the program carried out all operations in the traditional way that one is taught at school. The concept of borrowing and paying back in subtraction or carrying a digit forward in addition was fully covered in the instructions and hints, as well as visually on screen when a stroke is put through the digit being borrowed from and the new number that remains is written in smaller type.

Spelling

The spelling tester can be taken at seven levels of difficulty, each level comprising ten sets of ten words. This is a total of 700 words that can be accessed by the child, either in stages, or for the more adventurous, randomly selected from the whole dictionary.

The program works by showing all ten words that will be tested in the set. When the child is ready to take the test, each word is flashed for a short interval (three flash speeds may be selected by the user) after which the word is typed on the keyboard. If the speech option is selected, the program flashes each word up on the screen as well as speaking it.

Although this option slows the program down a tiny bit, I believe this is the better way to use the program to practise spelling. The student can follow his or her progress through the onscreen information which shows the number of words spelt and the number of errors.

Summary

Back to Basics is a competent package designed to teach 7 to 14 year olds the basics of arithmetic (addition, subtraction,

FACT FILE

Publisher: Lascelles Productions
Distributor: Don Quixote Software
(076) 391 578
RRP: \$39.95
Category: Arithmetic, Spelling
Comments: Budget priced, commercial software
Age Group: 7 to 14
Rating: **

multiplication, division) and spelling. It is reasonably priced for a commercial package and essentially does what it promises.

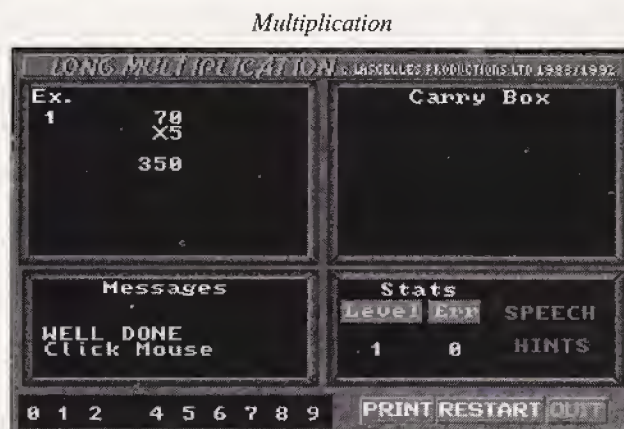
That said, it is also a somewhat limited program in both scope and its ability to entertain. It offers only a limited set of exercises in that it uses only one means of performing the arithmetic functions. The spelling module is limited by its vocabulary of 700 words - perhaps a facility for adding one's own words would have been useful. The exercises themselves are more of a drill than an entertaining game, and the only thing to keep a student using the package for any length of time is a desire to improve his or her proficiency at these tasks.

On a more positive note, the use of hints and speech help to make the exercises more palatable and in fact are a bonus in taking the beginning student through the steps of performing each exercise. In this regard, the software takes the part of a patient teacher and instructs in a way that is unlikely to discourage the child. The positive benefits are further reinforced by the words of encouragement from the computer as each exercise is completed.

Overall, a good value package which, although it does not fall into the "must have" category, can be bought with confidence to add to the collection.

Correspondence

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AMOS Column

by Wayne Johnson

I thought I might start this month's column off with a comment about programming and programmers in general. When you get around on the Bulletin Boards and talk to people, you begin to realise that AMOS is sometimes considered by some to be very much a child's language and you must be a machine code programmer or a C programmer to be a winner in the Amiga society. I usually like to ask those people what they have written with their extensive skills and you will get the usual reply of "Oh, a few little CLI commands" or "the occasional scroller..."

When I finish writing something like a five layered Parallax scroll with tiles (written in 2.5 hours) all running a perfect 50 fps with a *Protracker* or *Med* module playing along with it, I often sit back and reckon that they can keep their languages and their little projects. I'll keep going with a language that is simple, easy, and can allow me to write ANYTHING I want.

News

So why start an intro like that? No, not to brag about demos I'm writing but to announce the existence of the TURBO Extension V1.75. It's not a new compiler or anything like that, but it's a Scroll Stars generator, a Blitter Area mover, Memory byte manipulator and much more.

Obviously, my favourite new commands are the BLIT LEFT command and the MULTI BLIT command and we'll have a go at them in a tick. BLIT LEFT is very much like DEF SCROLL

command except that unlike DEF SCROLL, this one does not use the Processor at all.

It uses the Blitter only, and in doing so, you can move whole sections of the screen as smooth as silk without even the slightest jerk. Game and demo writers beware! This is the ultimate extension and costs only the price of a PD disk from the Australian AMOS Club for members or from any half decent BBS.

I've got another jump in updates again. AMOSPro is now up to V1.12, and AMOS & Compiler are up to V1.36 each. All three disks are available as updaters from the Club. I am still to

receive the AMOS Pro V1.2 update. This is the major update and I will hopefully have it in my hot little hands shortly.

World of Commodore

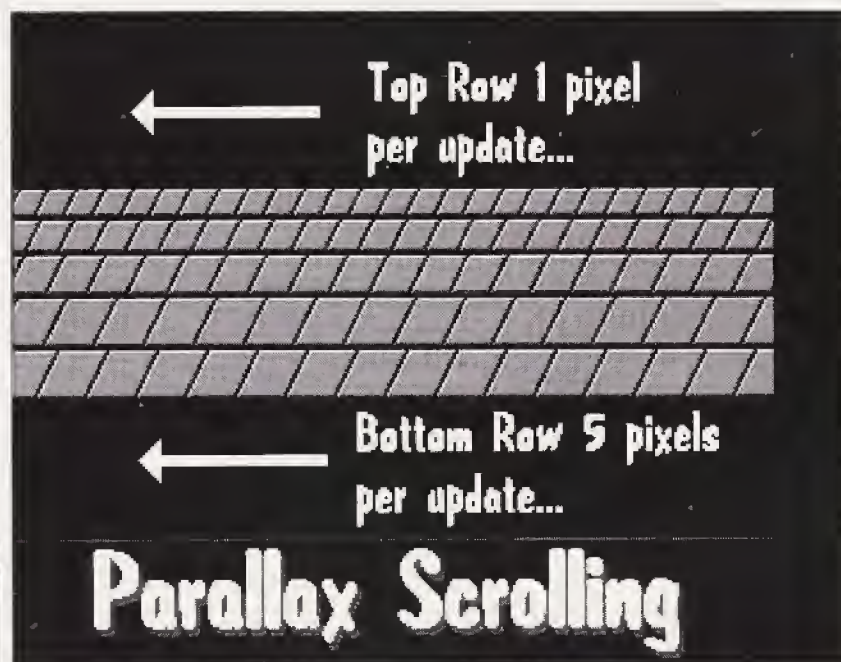
The Official Australian AMOS Club will be there selling Public Domain disks, Extensions and Newsletter subscriptions. We'll be on the Pactorics stand again displaying all the latest demos and gear for AMOS. Check it out!

Blitting Along

For this month's tutorial, I want to show off the power of the TURBO extension by giving you a simple listing and a few pictures to illustrate. The following listing sets up five scroll zones and begins to scroll them from within a loop. Move your mouse to control a BOB. When you move the bob into the scrolling fields, you will see the effect:

- (1) Screen Open 0,320,256,8,Lowres
- (2) Curs Off : Flash Off : Cls 0
- (3) Ink 4 : Circle 15,15,15 : Paint 5,5
- (4) Get Bob 1,0,0 To 33,33
- (5) Wait Vbl : Cls 0

Figure 1



- (6) Hide
- (7) For A=1 To 5 : Blit Erase A : Next A
- (8) Blit Store Left 0,1,0,60 To 320,80,-1
- (9) Blit Store Left 0,2,0,80 To 320,100,-2
- (10) Blit Store Left 0,3,0,100 To 320,120,-3
- (11) Blit Store Left 0,4,0,120 To 320,140,-4
- (12) Blit Store Left 0,5,0,140 To 320,160,-5
- (13) Repeat
- (14) Multi Blit 1 To 5
- (15) Paste Bob X Screen(X Mouse),Y Screen(Y Mouse),1
- (16) Vbl Wait 200
- (17) Until Left Click
- (18) Show : Edit

So what's the program doing? See figure 1.

(1) to (2) does the usual opening of a screen, setting up and clearing. (3) paints

a solid circle and (4) gets it as a BOB. (7) sets up a loop to remove any Stored Blits (See Figure 2 for example of a stored Blit). Even though we don't have any stored as yet, we may develop a syntax error on line (11) which would mean that lines (8) to (10) would have stored their Blits, and running the program a second time would cause a "Blit already defined". This is why it's a good habit to erase any possible Blits at the start of a program.

Lines (8) to (12) create five Blit areas to scroll. I could have created a For/Next Loop to input the 5 sets of values, but this way you can change and experiment with the values more easily. Let's just have a quick look at the Blit Left command:

Blit Left Screen,X1,Y1 To X2,Y2,Pixels

We define a Blit by saying what screen we wish to affect, the top left hand of the Blit area, then the bottom

right, and finally the amount of pixels per movement. If we set the amount of pixels to be 2, the Blit area will scroll 2 pixels to the right at a time. If we give it a value of 4, the Blit area will move 4 pixels at a time to the left.

However the command we are using is not the quick Blit Left command but the "Blit Store Left" command. This stores the Blit area rather than move it immediately, to be scrolled every time a "Multi Blit A to B" command is issued, like (14). Line (13) starts the loop and in (14) we get the Multi Blit command which moves all five Blit areas at once at their own pre-defined speeds (or amount of pixels).

(15) Pastes our BOB on the screen anywhere that the mouse is. Notice the use of the Xscreen/Yscreen. This is to keep the BOB's position relative to the screen, NOT the mouse's true co-ordinates. (16) Waits for the 200th line before it refreshes the screen (unlike Wait



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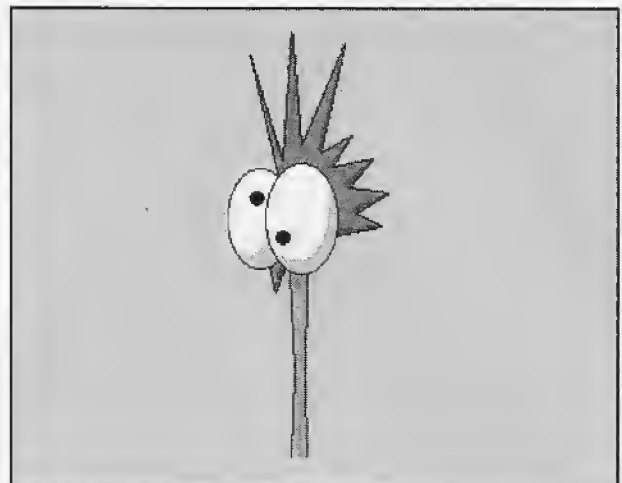
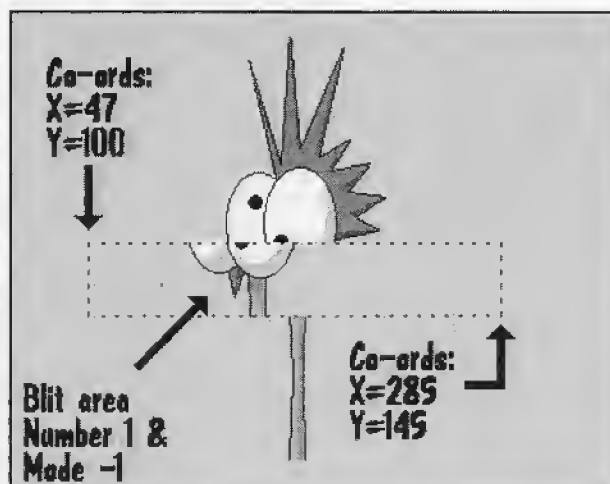


Figure 2

Vbl which waits for line 0 only), and finally (17) Loops for the next scroll unless the left mouse button is pressed.

Try it out. The effect is amazing, and already these new and powerful commands are being put to good use in games and demos. In the past, if you made a large scroller in AMOS, you would be very lucky if the frame rate didn't drop once or twice occasionally. Now you can have zillions of scrollers all running independent of each other and at full frame rate. All you need to do is to keep updating the graphics on the edge of the Blit area that is being scrolled away.

The author has been in contact with me and has promised to send V1.7

shortly (hopefully by the time you're reading this). It will contain vertical Blit commands and several bug fixes. This means that true sine scrollers will shortly be possible.

What Is Full Frame Rate?

Occasionally I may mention the term "full frame rate" or "50 frames per second" when talking about certain programs. For those who are a little confused, take the average Bitmap Brothers game or the average Scrolly demo with Filled Vector Cubes bouncing around the screen by groups such as "Silents" or "Digital Access".

You will notice everything that moves or scrolls does so incredibly smoothly without flicking or jerking. This is because all movement happens on the screen in between frames, when the raster beam which creates the image is moving back to the start of screen.

If your scrolling screen or demo appears to jerk every now and then, it's because your program is only just beating the screen refresh rate and occasionally it doesn't quite make it; the processor didn't keep up that time.

Anyone who knows much about MS-DOS PCs will know that these machines are incapable of holding 50 frames a second for animation, scrolling and

Graphics Block Shifting. This is because no matter how fast their Intel Pro/Co-processors or the VGA accelerator cards are, the processor has to do all the work.

Their graphics cannot be shifted under interrupt like the Amiga. Therefore, while the PC processor shifts all the graphics on the screen, several frames sneak through unchanged causing the action to jerk.

The Amiga is different, but still, some programmers have decided that they're never going to be good enough to keep their demos running in 50 Frames a second and so they fill the screen with all sorts of coloured garbage, scrolls, and lots of BOBs, slap a name on it and call it a demo. To them they may have created something that's within their abilities, but the truth is, with careful planning and coding, you can chuck in all sorts of weird effects and still get a full frame rate. And especially now that we have the Turbo Extension 1.6.

Therefore, that's what we are going to do next month. We will go through all the different effects on the Amiga that require very little processing time from either the processor or the Blitter, and those that do. We'll list them and I'll show you how to use alternatives or the best way to go about it. □

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Your Own Directory Utility

Part 2

by Greg Abernethy

Action Button Specifications

Following are the specifications for the Copy, Delete, Move, Rename, MakeDir, ShowIFF, Play8SVX and Read Text Buttons.

Copy Button Specifications

```
Button Name = "Copy"
Horizontal = 270 Vertical = 116
Border = Shadow
Button Type = "Text"
Text = " Copy "
RELEASE SCRIPT
If Current = "L"
  Do "CopyLeft"
  Let Current = "R"
  Do "ShowDir", RightDir
  Let Current = "L"
  SetCurrentDirectory LeftDir
Elseif Current = "R"
  Do "CopyRight"
  Let Current = "L"
  Do "ShowDir", LeftDir
  Let Current = "R"
  SetCurrentDirectory RightDir
EndIf
```

Explanation:

Different routines are performed depending on which window is the current location. (See the Routines for more details.)

Delete Button Specifications

```
Button Name = "Delete"
Horizontal = 270 Vertical = 133
Border = Shadow
Button Type = "Text"
Text = " Delete "
Script
If Current = "L"
  Do "DeleteLeft"
Elseif Current = "R"
  Do "DeleteRight"
EndIf
```

Explanation:

Depending on which window is the current location, the appropriate routine is performed. (See the Routines for more details.)

Move Button Specifications

```
Button Name = "Move"
Horizontal = 270 Vertical = 150
Border = Shadow
Button Type = "Text"
Text = " Move "
Script
```

```
MakeDocument "Work"
WorkWithDocument "Work"
If Current = "L"
  InsertDocument "Left"
  Do "CopyLeft"
  Let Current = "R"
  Do "ShowDir", RightDir
  Let Current = "L"
  SetCurrentDirectory LeftDir
EndIf
```

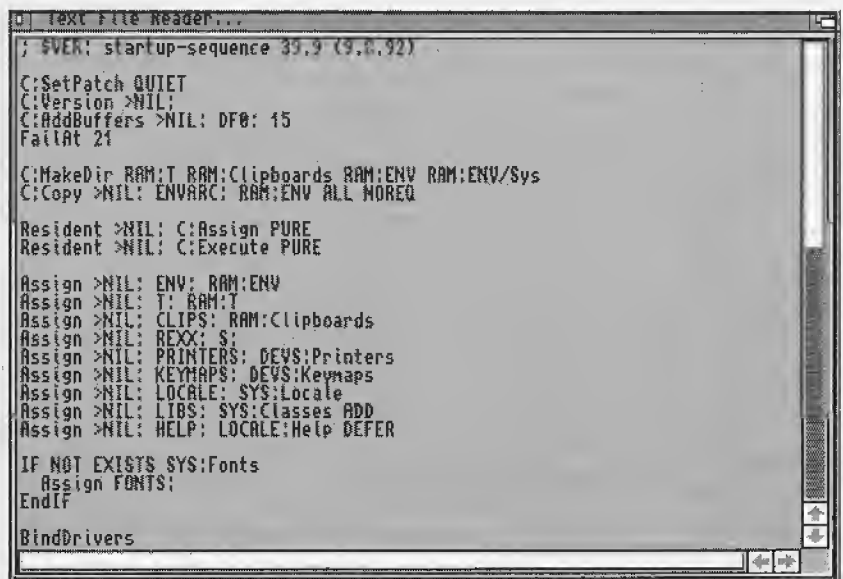
```
WorkWithDocument "Left"
Clear DOCUMENT
InsertDocument "Work"
Flush "Work"
Do "DeleteLeft"
Elseif Current = "R"
  InsertDocument "Right"
  Do "CopyRight"
  Let Current = "L"
  Do "ShowDir", LeftDir
  Let Current = "R"
  SetCurrentDirectory RightDir
WorkWithDocument "Right"
Clear DOCUMENT
InsertDocument "Work"
Flush "Work"
Do "DeleteRight"
EndIf
```

Explanation:

Depending on which window is the current location, the appropriate routine is performed. (See the Routines for more details.)

Rename Button Specifications

```
Button Name = "Rename"
Horizontal = 270 Vertical = 167
Border = Shadow
Button Type = "Text"
Text = " Rename "
Script
If old <> ""
  If GetChars(old,1,1) = ""
    Let old = RemoveChars(old,1,1)
    MoveCursorTo STARTOF LINE
    Delete CHARACTER
  EndIf
  If GetChars(old,1,6) = "[Dir]"
```




```

Let old = RemoveChars(old,1,6)
EndIf
OpenRequester "Sub","Rename",old
EndIf

```

Explanation:

When the user selects "Rename", the filename is checked, and then the subdeck card "Rename" is displayed. The variable "old" is sent to the SubDeck.

MakeDir Button Specifications

```

Button Name = "Makedir"
Horizontal = 270 Vertical = 184
Border = Shadow
Button Type = "Text"
Text = " Makedir "
Script
OpenRequester "Sub","MakeDir"
SHOWIFF

```

```

BUTTON SPECIFICATIONS
Button Name = "ShowIFF"
Horizontal = 270 Vertical = 202
Border = Shadow
Button Type = "Text"
Text = " ShowIFF "

```

```

Script
MoveCursorTo STARTOF LINE
If TheCharacter = ""
Delete CHARACTER
EndIf
Let View = TrimString(TheLine)
Let n = NumberOfChars(View)
Let end = GetChars(View,n - 4,5)
If FileType(View) = "Picture" or FileType(View) =
"Brush" or end = "info"
Let View = TheCurrentDirectory\|View
GotoCard "ViewIFF"
EndIf

```

Explanation:

This script enables the user to view IFF pictures, brushes or icon files. The script checks to ensure the file selected is valid and then goes to the "ViewIFF" card to display the file.

PLAY8SVX BUTTON SPECIFICATIONS

```

Button Name = "Play8SVX"
Horizontal = 270 Vertical = 220
Border = Shadow
Button Type = "Text"
Text = " Play8SVX "

```

```

Script
MoveCursorTo STARTOF LINE
If TheCharacter = ""
Delete CHARACTER
EndIf
Let Hear = TrimString(TheLine)
If FileType(Hear) = "Sound"
PlaySound Hear
EndIf

```

Explanation:

This script allows the user to play any valid 8SVX sound file. NOTE: there are other types of sound files that CanDo cannot play. No error is generated if an incorrect file is selected.

Read Text Button Specifications

```

Button Name = "Read"
Horizontal = 270 Vertical = 238
Border = Shadow
Button Type = "Text"
Text = " Read Text "
Script
MoveCursorTo STARTOF LINE
If TheCharacter = ""
Delete CHARACTER
EndIf

```

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```

Let Read = TrimString(TheLine)
Let n = NumberOfChars(Read)
If FileType(Read) = "Unknown" and
GetChars(Read,n - 4,5) <> ".info"
  GotoCard "Read"
EndIf
Script

```

This script allows the user to view any text file. CanDo uses the FILETYPE function to determine what a file is, and returns "Unknown" if the file is a text file or an ".info" (icon) file. I check to make sure the file is not an icon file and then go to the text display card to show the text file.

ROUTINES

```

"CopyRight" ROUTINE SCRIPT
WorkWithDocument "Left"
MoveCursorTo STARTOF DOCUMENT
Let L = LinesInDocument
Let x = 0
Loop
Let x = x + 1
PositionOnLine x
If GetChars(TheLine,1,1) = ""
  MoveCursorTo STARTOF LINE

```

```

Delete CHARACTER
Let ToCopy = TrimString(TheLine)
If GetChars(ToCopy,1,5) = "[Dir]"
  Let ToCopy =
  RemoveChars(ToCopy,1,6)
  Dos "c:copy"||LeftDir||ToCopy||
  RightDir||ToCopy||"ALL"
Else
  Dos "c:copy"||Left
  Dir||ToCopy||RightDir
EndIf
Until x => L
MoveCursorTo STARTOF DOCUMENT

```

Explanation:

This routine will copy any selected files from the SOURCE directory to the DESTINATION directory.

```

"CopyRight" ROUTINE SCRIPT
WorkWithDocument "Right"
MoveCursorTo STARTOF DOCUMENT
Let L = LinesInDocument
Let x = 0
Loop
Let x = x + 1
PositionOnLine x
If GetChars(TheLine,1,1) = ""

```

```

MoveCursorTo STARTOF LINE
Delete CHARACTER
Let ToCopy = TrimString(TheLine)
If GetChars(ToCopy,1,5) = "[Dir]"
  Let ToCopy = RemoveChars
  (ToCopy,1,6)
  Dos "c:copy"||RightDir||ToCopy
  ||LeftDir||ToCopy||"ALL"
Else
  Dos "c:copy"||Right
  Dir||ToCopy||LeftDir
EndIf
Until x => L
MoveCursorTo STARTOF DOCUMENT

```

```

"DeleteLeft" ROUTINE SCRIPT
WorkWithDocument "Left"
MoveCursorTo STARTOF DOCUMENT
Let L = LinesInDocument
Let x = 0
Loop
Let x = x + 1
PositionOnLine x
If GetChars(TheLine,1,1) = ""
  Let ToDelete = TrimString(TheLine)
  Let ToDelete = RemoveChars(ToDelete,1,1)
  If GetChars(ToDelete,1,5) = "[Dir]"
    Let ToDelete = RemoveChars(To
    Delete,1,6)

```

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```

        Dos "c:\delete"||LeftDir||To
        Delete||"ALL"
    Else
        Dos "c:\delete"||LeftDir||ToDelete
    EndIf
EndIf
Until x => L
Do "ShowDir",LeftDir

```

Explanation:

This routine will delete any selected files from the SOURCE directory.

PLEASE NOTE: I accept no responsibility for any files accidentally deleted while using this program.

```

"DeleteRight" ROUTINE SCRIPT
WorkWithDocument "Right"
MoveCursorTo STARTOF DOCUMENT
Let L = LinesInDocument
Let x = 0
Loop
    Let x = x + 1
    PositionOnLine x
    If GetChars(TheLine,1,1) = ""
        Let ToDelete = TrimString(TheLine)
        Let ToDelete = RemoveChars(ToDelete,1,1)
        If GetChars(ToDelete,1,5) = "[Dir]"
            Let ToDelete = RemoveChars(ToDelete,1,6)
            Dos "c:\delete"||RightDir||ToDelete||"ALL"
        Else
            Dos "c:\delete"||RightDir||ToDelete
        EndIf
    EndIf
Until x => L
Do "ShowDir",RightDir

```

Title Bar Display Timer Object

I have added a timer that will display the current time and available memory in the WINDOW TITLE BAR. The specifications are;

```

TIMER OBJECT NAME: "Info"
INTERVAL RECURRING every 5 seconds
Script
Let ac = AvailableChipMemory
Let af = AvailableFastMemory
SetWindowTitle
LeftJustify("Directory Utility...",30)||Left
JustJustify("FAST:"||af,15)||TheTime

```

Display IFF and Read Text Card

All that is required now is to create the last two cards of the main deck. The specifications for these cards are;

```

DISPLAY IFF CARD SPECIFICATIONS
WINDOW NAME    NONE

```

```

WINDOW SPECIFICATIONS
X POSITION = 0 : Y POSITION = 0
WIDTH = 320 : HEIGHT = 256
NUMBER OF COLOURS = 4
NO GADGETS
WINDOW OPTIONS
THE WINDOW HAS INVISIBLE BORDERS
ALWAYS OPEN THE WINDOW ON ITS OWN SCREEN

```

```

CARD SPECIFICATIONSCARD
NAME "ViewIFF"
AFTER ATTACHMENT SCRIPT
If FileType(View) = "Picture"
    ShowPicture View
    ScreenTo FRONT
ElseIf end = ".info"
    LoadIcon View,"icon"
    ClipIconImage "icon","temp"
    GetBufferInfo "temp",w,h,d
    ShowBrush "temp",320 - (w/2),128 - (h/2),BRUSHPALETTE
ElseIf FileType(View) = "Brush"
    LoadBrush View,"temp"
    GetBufferInfo "temp",w,h,d
    ShowBrush "temp",320 - (w/2),128 - (h/2),BRUSHPALETTE
EndIf
FlushAll

```

Explanation:

When the Card loads the script checks to see what type of file it is to display and then displays the appropriate file. I have centred the Brush and Icon files on the screen for aesthetic purposes.

PICTURE BUTTON SPECIFICATIONS

```

Button Name = "Go"
Horizontal = 0 Vertical = 0
Width = 320Height = 256
Border = NONE
Button Type = "Area"
Script
GotoCard "DirUte"

```

Explanation:

The button is displayed to enable the user to click in the window to return to the directory card. On high-resolution screens it will be necessary to click in the left half of the screen to return to the directory page as the width of a high-resolution screen is 640 pixels.

```

READ TEXT CARD SPECIFICATIONS
WINDOW NAME "Text File Reader..."
WINDOW SPECIFICATIONS
X POSITION = 0 : Y POSITION = 0
WIDTH = 640 : HEIGHT = 256
NUMBER OF COLOURS = 4
CLOSE GADGET: DRAG BAR GADGET:

```

```

FRONT/BACK GADGET
WINDOW OPTIONS
THE WINDOW HAS VISIBLE BORDERS TRY TO OPEN THE WINDOW ON THE WORKBENCH
Close Gadget Script
GotoCard "DirUte"

```

```

CARD SPECIFICATIONS
CARD NAME "Read"
AFTER ATTACHMENT SCRIPT
WorkWithDocument "Read"
Clear DOCUMENT
LoadDocument Read,"Read"
MoveCursorTo STARTOF DOCUMENT
TEXT READER

```

```

DOCUMENT SPECIFICATIONS
DOCUMENT OBJECT NAME "ReadDoc"
DOCUMENT NAME "Read"
DOCUMENT TYPE Memo Document
NO TYPING Horizontal and Vertical Scroll Bars
DOCUMENT ORIGIN X = 8 : Y = 14
DOCUMENT SIZE Width = 624 : Height = 236
BORDER Double Bevel
NO SCRIPT

```

When you have done this, save your application and test it to see if all the options work correctly. When testing, always use duplicates of files when copying, deleting, renaming or moving to avoid any problems.

Final Words

This completes the Directory Utility. I wasn't planning to have such a large tutorial this month but it seemed a shame to leave the last couple of features until next month. Obviously there are many things that can be added. Some suggestions are;

- 1) Use my text editor on the Text Reader Card to enable the user to edit the text as well as print the file.
- 2) Use Graphic Dump on the Picture Page to print the current picture. The command for doing this is Dos "sys:system/GraphicDump" will print the currently displayed screen after a ten second delay.
- 3) Launch applications with a double-click on the file. (A bit tricky!!)
- 4) Create icons to go with directories when they are created or to be added to files that do not have icons.
- 5) A font viewer for when a font is double clicked.

I hope you have enjoyed this tutorial. See you next month.



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The C64 Column

by Owen James

User Groups

If you're from the lower Blue Mountains or Penrith area, you'll be pleased to know that Penrith Commodore Users Group is still going strong. User groups are a terrific way to meet similarly interested computer users and discuss software, swap ideas, and get help and advice. For more information about PCUG call the club President, Steve Stecyk, on (02) 631 2323. If you're part of a User Group which supports the C64 or 128 and would like to see it mentioned here, write to me with details of meeting places and times, and a contact number and address.

Island Sunk

The Island Software Club has, once again, closed its doors, this time for good. You may recall Island closed for a few months last year while it moved, causing many problems and complaints from consumers waiting on orders, but this time it won't be back.

New GEOS Publisher?

Word around the traps is that a new GEOS publishing program is in the works, specifically for GEOS 128 in 80 column mode. It will not be programmed nor published by GeoWorks (ex Berkley Softworks), instead it will be produced by an independent US programmer. Watch out for more details over the coming months.

New C64/128 BBS

This time for modem owners, The Space Station BBS is now online and offers message and file support for Commodore 64 and 128 owners. Check it out by calling (047) 742 252.

RS-232 Kit

From the latest Rod Irving Electronics catalogue, a simple to build interface kit which gives your C64 compatibility with standard RS232 hardware. The most obvious use for this is for interfacing external modems designed for IBMs and Amigas with your C64. The cost of this kit is \$24.95 plus \$4.95 postage and packing. Call their toll-free order line on 008 33 5757, or send your order to RIE, PO Box 620, Clayton Vic 3168. Quote stock number K10330.

Got a news item to contribute? Write all the relevant details, plus your own name and address, and post it to The C64 Column, PO Box 288, Gladesville NSW 2111, or fax it to (047) 57 3982.

C64 Tricks and Tips

Tricks and Tips for the Commodore 64, from Abacus Software, is a book that has been around for many years and contains a wealth of useful information for the curious C64 user. It is still available in limited quantities, so this month I thought we'd take a look at it.

Let me begin by saying that this book

is not just a compilation of small programs for swapping joystick ports or dumping screens to the printer. Rather, it is a collection of information for users wishing to learn more about their C64 and how to access it.

Tricks and Tips covers many topics, including programming graphics, data management, a look at the Forth programming language, CP/M for the 64, multi-tasking, plus interface and expansion options. In most cases, a fairly in-depth description of the topic is accompanied by one or more program listings in either BASIC or machine code.

"a wealth of useful information for the curious C64 user"

One part of the book which may be of interest, due to the few printers currently available with C64 serial interfaces, is the chapter on using standard Centronics (parallel) printers with the 64. Many GEOS owners have been doing this for quite some time thanks to the usually expensive (and now rare) geoCables. For the uninitiated, geoCable plugs into the User port in the C64 and has a standard Centronics plug at the other end of the cable. Using specially written printer drivers, GEOS output could be directed to almost any printer that's compatible with IBMs, Amigas etc.

Tricks and Tips gives a fairly comprehensive description of using the User port for this purpose, as well as a program listing for re-directing the output from the serial port to the User port. Owners of geoCable, or similar, can use this program for directing output from other applications or their own BASIC programs. It also gives a layout description of the necessary cable, so if you're handy with a soldering iron you can build your own very inexpensively.

As I said earlier, *Tricks and Tips for the C64* is still available in limited quantities, so ask your local retailer. My copy was supplied by Code One Computer Services, which currently has them for

\$39.95 plus \$4.00 postage and packaging. You can order from Code One by calling (047) 57 3982, or post a cheque or credit card details to PO Box 192, Katoomba NSW 2780.

MAIL

Better Print?

Rod LeNaine-Smith, of Erindale SA, writes: "Dear Owen, I am writing to seek some information to make better use of my computer. I am using a C64 which I have found familiarity and am very tolerant of the slowness of the machine. I primarily use *Superscript*, *Microswift Calc*, *Multiplan*, and *Superbase*, and find them very useful for home use.

"At work I use an Apple Mac with scanner and laser printer, and an IBM compatible using *Word*, and *Works* with a laser printer. I make frequent use of the drawing capabilities of both machines. I would like to have a similar setup at home but cannot justify the cost at this stage.

"Is there any way in which I can upgrade the C64 to print with a better quality, possibly with colour? And can the C64 be used with a mouse to draw graphics?"

OJ: Compared to Macs and IBMs, the C64 is somewhat limited in its potential, but there's still a lot you can do to bridge the gap. Firstly, I'd recommend GEOS 64. GEOS is a replacement operating system for the C64 which brings Mac and Windows-like elements to the C64. Like the Mac, nearly all functions are controlled with a mouse or similar input device, so drawing free-hand is much more natural. Included with GEOS is a WYSIWYG word processor, graphics program, and the oper-

ating system itself, and it retails for around \$62.00. With a suitable interface cable and printer drivers, GEOS can also print to a laser printer.

Connecting to C64s?

Travis Howell, of Aspendale Vic, writes: "Dear Owen,

1) Is it possible to connect two C64s together?

2) Is there any program that allows you to read IBM or Amiga disks in the 1541 drive?

3) Can you buy the TIB 3.5" drive in Australia?

4) How do you transfer a game from the IBM or Amiga to the C64?

5) Is there a program to transfer tape games to disk?

6) Where can I get the SAM talking voice for the C64?

7) What happened to the Sound & Graphics column?

8) Where can I get a program to index articles of magazines?

9) Is there a program to recover files after 'newing' the directory?"

OJ: 1) Yes, with a null modem cable. By running a terminal program on each you can send files between the two.

2) No. The nearest program for transferring between IBM and Amiga is the *Big Blue Reader*, but sadly it works only with 1571s and 1581s. You can transfer word processing and other files over to IBM or Amiga disks, or vice versa, by using a null-modem cable between the two, or via a modem. There are also several places that can do the transfer for you for a small fee.

3) Not that I'm aware of. I haven't seen or heard anything of the TIB unit in Australia.

4) You can transfer the game to a C64 disk, but it won't actually run. To make programs designed specifically for one computer platform run on another requires an emulator, and there are none for the purpose you describe.

5) Yes, there are a few different ways of transferring tape programs to disk. Probably the easiest is by using a Freeze cartridge such as *The Final Cartridge III* or *Action Replay Mk VI*. Using these types of cartridges, you can simply load the program from tape, hit the switch, and save it in a frozen state to disk.

6) I don't know of anywhere where you can get the SAM voice unit from. Best idea would probably be to check some of the UK Commodore magazines for advertisements and get one sent to you.

7) It died not long before the GEOS column was laid to rest.

8) The best type of program for this is just a database system. There are several around, including *Superbase 64*, *Kwik File*, *The Filer*, *Maggie Database*, and even *geoFile* if you're a GEOS fan. Ask your local retailer, or call Code One on (047) 57 3982.

9) There are several utilities around for this purpose, some public domain and some commercial. *Kwik Utility* is one of my personal favourite commercial disk utilities for a range of such purposes. You might try contacting some of the many C64 public domain suppliers that advertise in this magazine, such as Brunswick Publications.

That's just about it for this month's edition. I'll be back next month with all the latest, but in the meantime you can drop me a line at The C64 Column, PO Box 288, Gladesville NSW 2111. See you next time. □

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For Beginners Andy's Attic

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by Andrew Leniart

Welcome back to my column. It's been a while since we've had a "readers' letters" issue of Andy's Attic so I've decided to devote this issue to just that. Keep that feedback rolling in.

Towards the end, we'll also address the issue of Public Domain software and the pros and cons of buying it. Should prove interesting reading to most Amigo's that enjoy the great variety of software provided by the public domain circles. But first ...

A Sob Story

It's not been a very good month here at Andy's Attic at all unfortunately. My Commodore A590 decided to bite the dust recently which has reduced me back to a twin floppy system. (Shudder!) Worse, Midi-Mouse Computers, who used to sponsor Andy's Attic BBS by supplying a company phone line to support Amiga and IBM users alike, have suddenly disappeared as did the phone line the board was running on. Yet another victim of the recession we had to have?

As a result, Andy's Attic BBS is now searching for another sponsor. If you own a business and would like to sponsor a popular Bulletin Board System in return for good 24 hour advertising of

your company and wares on the board, please contact me either by writing to Andrew Leniart, PO Box 1335, Hoppers Crossing 3029 or calling me direct via modem at Andy's Attic BBS on (03) 749 4897. The board runs 24 hours a day. Those wishing to contact me via FidoNet netmail can address their messages to 3:633/106. Leave a note and a telephone number so I can call you back to discuss details. Thanks.

Readers' Letters

Pure bit problem

Okay, enough of the sob stories. Let's get the show rolling this issue with a letter from Arnold McLaren from Rosanna in Vic who writes in to say:

"Dear Andy, I am a 70 year old computer owner having upgraded this year from an A500 which I purchased in 1988, to an A2000 with a 40Meg hard drive.

"The A2000 was my grandson's computer which he wanted to change to an IBM clone because the college computers are mainly IBM or Ms-Dos operating systems. We did a swap, he sold the A500 and I upgraded to the A2000 because of the hard disk facility. The A2000 has 3megs ram, 1meg chip and 2meg fast ram. A GVP 42meg hard drive and SCSI controller with a Data

Flyer Ram card with 2megs ram installed.

"Last Saturday we installed *Cross Dos* and *Cross PC* on the hard drive and now on the start up CLI was have the following messages ...

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GVP Autoboot

Workbench disk Release 1.3 Version 34.20

The Date and Time

[Cli 2]

"These are the normal boot messages, but then a new line below, the following message appears ...

Pure bit not set.

"The questions are, what does this mean and how do we eliminate it? The computer seems to operate normally, although on Saturday night as I finished playing *Railway Tycoon* and attempted a save, the Guru appeared. Now this has not happened before with this game.

"I have not had the opportunity yet to use *Cross Dos* or *Cross PC* but the installation seems to be okay, for when the disks are inserted in the disk drives the disk icon appears and also icons for Pc0 and Pc1.

"Andy, thanks to your column in ACAR, I am beginning to experiment more with the Amiga guided by your replies to readers' letters and a desire to know more. If you wish, you may use this in ACAR if you think it would be a help to others."

AL: And use it I shall. The problem will be in the startup-sequence file in DH0:S directory. You'll need to fire up your favourite text editor to examine and edit this file to get rid of the annoying little "Pure bit not set" message.

What to look for in there are commands which are being made Resident at startup time. As an example of a correct way to make a command resident, check out an unmodified WB1.3 startup-sequence for the following line ...

resident c:Execute pure

Note the "pure" word tagged on the end of the command line. This forces the Amiga to make the command resident regardless of whether or not its pure bit is set. Check to make sure that all commands that your Amiga is attempting to make "resident" are being

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made resident in the correct way. If they are, then you need to hunt deeper. Make a note of all the commands which are being made resident and check to see if they have their pure "protection" bits set on them. You can find this out by using the AmigaDos LIST command.

In a Cli or Shell, type LIST C: and you will end up with a directory listing of your C: directory showing among other things, the files protection bit's status.

le:

DH0 My_Shell:> List c:

dir 8772 —p-rwed 13-Aug-88 18:04:22

execute 4712 —p-rwed 13-Aug-88 18:05:10 etc..

Now compare the list of resident commands being made resident in your startup-sequence to see if they all have their —p-rwed "pure" bit set. If not, then you'll need to set the protection bit yourself. Do this via the AmigaDos "protect" command.

Eg: "Protect c:command_name p ADD"

The above will set the pure bit on the command in question and get rid of the "Pure bit not set" message. However a word of caution here. For a command to be made "resident" safely, it must be fully reentrant and re-executable. In simple terms, a command truly pure enough to qualify for its pure bit to be set must be usable by more than one process "at the same time". Many third party programs or commands do not fully meet the required criteria even when their .doc files claim they do.

It starts getting a touch complicated to the new Amiga user and can often lead to unexplained guru's or weird and wonderful happenings during the course of everyday workings. Best bet is play it safe and leave protection bits the way they came with the program when you got it if unsure.

Why Make Them Resident?

Commands are made resident to save time. A command which is resident can be executed from the Amiga's memory hence saving the need for it to be re-loaded from disk each time it needs to be used. In my own experiences the pros of the time resident commands save are far outweighed by the problems they

might cause if they have not been programmed correctly to be resident. I personally prefer to wait an extra few ticks at startup time than put up with the hassles a poorly written resident program can cause.

Your problems with *Railway Tycoon* and *Guru* may or may not be related to a resident command. The only way to find out is to experiment a bit. Remove all non standard WB1.3 "resident" commands one by one from your startup-sequence and see if the problem recurs. (Simply prefix the line with semi-colon). A bit of experimentation should soon find an answer and you'll learn things as you go along to boot. As long as you always work with a backup, you've nothing to lose but a bit of time.

Digiview Gold Problems

Matt Muir of Little Hartley in NSW writes in to share his problems with *Digiview Gold V4* ...

"Dear Andrew, My problem concerns the compatibility of WB2.04 and *DigiView Gold V4*. I recently upgraded from WB1.3 to WB2.04 and have since found that *DigiView* refuses to work. I have asked the dealer I bought both products from and he assured me that he hasn't had any problems, but suggested I buy a ROM switcher.

"What I would like to know is whether there have been any releases of *DigiView* later than V4 and whether or not it is in fact compatible with WB2.04?"

"I don't recall seeing a list of WB2.x compatible programs in ACAR lately, so maybe it's about time there was one. A list of programs that definitely don't run under WB2.x along with programs that have had revisions to make them compatible would be ideal.

"I hope you can answer my questions through your column and keep up the support for those with WB2.x as it appears that it has been leapfrogged by WB3 and the A1200s. I'll still be using WB2 for a while yet."

AL: It appears from my own efforts that to get some firm info on Newtek's *DigiView Gold*'s progress is a little hard to say the least. I rang several software houses on your behalf which handle or have handled Newtek products in the

past, both here in Victoria and interstate, and could get no conclusive answers out of any of them in regards to an update. I got a lot of speculation, but little else.

Not having a copy of *DigiView Gold 4* here to try myself, I can't give you a definite answer as to whether or not it is WB2.x compatible. Your dealer's answer to you "assuring that he hadn't had any problems" does not exactly make sense, going with the advice he gave in the same breath that you should purchase a ROM switch. With all things considered, I would say that it's not and that the ROM switch suggestion is probably your easiest solution to be able to quickly regain the use of your software. They can be purchased quite cheaply (from as little as \$49.95) and work brilliantly. As a matter of fact, I use one here. There are plenty of different types available so shop around. I personally recommend the mouse activated job which can be purchased from Megadisc. Never had a problem with it here.

This would serve as a good interim measure while you made direct enquiries from NewTek about *DigiView Gold*'s future development via post to the USA. After my efforts to get an answer for you, I believe the only way you are going to get reliable info is to go straight to the horse's mouth. Sorry we couldn't be of more help. More info will be published on *DigiView Gold*'s development as soon as any comes to light.

Just on these ROM switches for a tick. Note that the bonus of installing one of these into your Ami is that should you suddenly discover yet another piece of software incompatible with WB2.x, you have an easy means to still effectively use the software.

Your idea of publishing a list of compatible and incompatible software for WB2.x has been taken on board. You'll notice there was an A1200 compatibility list two issues back and there's an A3000/WB2.x compatibility guide in *Amiga Annual 1993*. Look for a major update in the '94 Annual, due out around early December.

Finally, fear not that you will be abandoned because of the sudden appearance of WB3. This little black duck will

be staying with WB2.05 for a little while yet as well and Andy's Attic will still be providing support to our WB1.3 users problems. Hope that eases your mind some.

Lost Disks - and Buying Public Domain

A Tasmanian reader writes in some rather serious complaints and grumbles about a lost disk. For the purpose of the exercise, we'll call him Joe. Joe writes

"... Dear Mr Leniart, I would like to know why my letters have been ignored up until now. If I don't hear from you in the next seven days I will be taking action be it legal or otherwise - Consumer Affairs in your state!

"If you don't send me my copy of *Rainbow Writer VI.6* back (a copy that works), then I would like a refund of our cheque sent to you on the 4/11/92 along with the postage I sent to you in my second letter - \$5.00!

"I cannot for the life of me see what the problem is Mr. Leniart! A problem that should have been fixed months ago is still unresolved as far as I'm concerned because I'm still out of pocket. I've spent \$8.00 on a disc I haven't received back as yet and I'm also missing \$5.00 postage which I sent you in my last correspondence to you!

"I've also written to Mr Andrew Farrell about this matter but he seems to have developed amnesia as you have! Hoping to hear from you soon!"

AL: I decided to include the above letter in an attempt to bring to all our readers' attention, the considerations which should be taken into account when purchasing PD software from any PD supplier, and to offer suggestions as to how to quickly get satisfaction if you are unhappy with what you got.

Joe's letter was news to me as I recalled sending him the disk he ordered promptly and his letter suggested that he got it. I did not however receive the second letter he speaks of and was curious as to who it was that cashed his \$5.00 cheque or money order as this can be easily traced. I rang Joe over the telephone and the facts turned out to be this.

1. He did indeed receive the disk he asked for but the program he was interested in did not perform to his satisfaction. He could not get it to save his finished demo creations.

2. He then sent the original disk back and included \$5.00 in CASH in the envelope rather than including a secure method of payment.

3. I spoke to Andrew Farrell asking if he had received a letter from Joe about this matter and he also can not find any record of a letter to him.

Things like this quickly boil down to a "he said, I said" situation. But let's take a quick look at the facts.

1. There are NO guarantees (unless specifically given by an advertisement) that a public domain program will work on your machine. You can't expect there to be with the price that you are getting the software for. PD houses that do offer money back guarantees and product support are rare and exceptionally good ones. Prime Artifax or Megadisc are two excellent examples of quality public domain suppliers who offer a satisfaction guarantee. But even they can't give an iron-clad promise that a freely distributable program will perform the way you expect it to. Let's not forget that they do not "code" the software on these disks. They merely provide a distribution service at as low a cost as possible. The program authors cannot easily be contacted to resolve problems, so even the most dedicated PD library service is going to be limited to what they can individually resolve when it comes to compatibility or performance problems.

2. When ordering disks containing any type of software, be it commercial or public domain via postal mail, NEVER EVER send cash. It's asking for trouble. Your mail passes through far too many hands along its merry way to the destination. If you insist on sending cash, at least go to the trouble of sending it via certified mail.

3. I never got Joe's second letter, nor can Andrew Farrell find any record of one sent to him about the matter. Some of you may be thinking that we could be lying. But if that was the case, why would I make this issue public?

Moral of the Story

The moral of the story is you must be aware of what you're getting when you buy PD software. If guarantees of performance are what you're looking for, then go for the commercial packages that cost hundreds of dollars and you can then quite rightly expect and demand that the software you receive to perform precisely as it's described in any advertisements. However if you decide to opt for PD software before laying out the big bucks, then keep in mind that you simply don't have the same type of luxuries that come with commercial software purchases. Public Domain software is by nature without any guarantees. Don't take my word for it, read through the documentation files and disclaimers that come with it. PD/ShareWare authors cannot afford to offer the same type of support that large commercial software houses can. Besides all that, they shouldn't have to. They are after all, giving you potentially many hours of their work for nix. The cost of a disk.

Finally, if you find you are having problems getting a response to your queries through the mail, then consider giving the people concerned a call on the phone if the numbers are available to you. Our friend "Joe", would have saved himself a lot of anxiety if he had made a simple phone call to Andrew Farrell at the magazine and asked if he could get me to contact him about the matter.

Instead, Joe got himself all het up and hot under the collar for a couple of months over something that was eventually sorted out over the phone in a few minutes. Joe (you know who you are) should by now have another complimentary copy of the disk in question which I have posted to him via certified mail. Enough said.

Concluding

That's about all we have space for in this issue of ACAR. Look forward to our next Andy's Attic when we shall continue with our explorations of the great new WB2.0. Till then ... call Andy's Attic BBS on 03-749-4897. □



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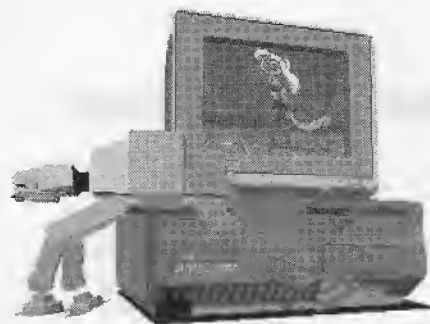
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Hot PD

Daniel Rutter files yet another download on the latest in almost FREE software.

Software AGA Emulator?

Those little computing gremlins have been at it again. Some people write viruses, some release hacked programs claiming to be the latest version, but some are a little more imaginative.

Such are the authors of SoftAGA, a package which solemnly promises to convert your old model Amiga into a whiz bang AGA machine - but only, of course, after you get the options right. It includes mounds of options, each one with its own slider, gadget or button, and the usual cryptic technobabble explaining them.

Many a hopeful but gullible Amigoid has wasted much time gingerly tweaking these gadgets one way or the other; in vain. Just as new seat covers cannot turn a Volkswagen into a Jaguar, so too a nifty looking and impenetrably documented piece from the bust people at SuckerSoft cannot turn your old computer into a 4000. Sorry.

Here Endeth BootX

Want more bad news? Fine. The author of *BootX*, a very powerful virus killing package, has given up the ghost and stopped updating the program. Personally I think it's hardly surprising, since a virus killer that needs updating every couple of months is hardly the sort of project you can stay in love with for long without being paid for it, and *BootX* was indeed Freeware. Fortunately, there are still plenty of good virus killers out there, so the Amiga world is not about to be inundated

by electronic pathogens.

Fish Update

Time for another Fish update. Fred Fish's invaluable library expands apace, and has now reached 850 disks. As usual, here's a highlights package of the latest Fish disks.

Fish 822 contains *NetHack 3.1.0*. Yup, I'm off again about another new Hack game. If you've missed my previous raves about these sorts of games, they've got no sound, crummy graphics and amazingly addictive gameplay. In *NetHack*, you play the usual Intrepid Adventurer on his or her way to kick the bottom of the usual Great Evil Mage and return the usual Amazingly Powerful Artifact to the usual Hugely Appreciative Public.

What makes these sorts of games - *Hack*, *Moria*, *Omega*, the antique squib *Larn* - so much fun is that they're HUGE. You can be really, truly and genuinely addicted to them for six months and still be learning stuff. And with each version they get bigger and bigger.

This current version of *NetHack*, so

called because it was ported from a networked version, adds lots of highly groovy stuff. A new interface, with three display windows and line-of-sight mapping instead of the weird instant-view system used before. Quests for the different character classes, on top of the initial purpose of the game. A much bigger multi-level endgame, and lots of specialty levels.

And the biggie - intelligent monsters. Yes, now the little blighters will use weapons, wear armour, read scrolls, zap wands, drink potions, and generally make your life unpleasantly brief by all the devious techniques you previously could only use yourself. This is a really good addition, which makes the game MUCH more fun - particularly when a monster finds out what a nasty potion, scroll, wand or cursed weapon does; if you see him get poisoned, paralysed or whatever, you can ID the object without trying it out yourself!

This version's a tad unstable, and is known to occasionally reset its NewGame file to defaults - keep a backup so you keep your favourite screen colours - but *NetHack* is still perfectly playable, and the bugs are not very annoying.

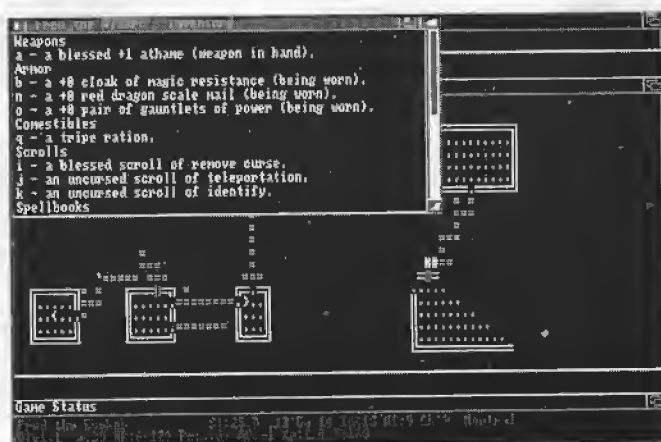
There's a better user interface for starting and configuring the game, which doesn't hurt, and updated documentation. The manual is still pretty sparse about most of the game, though - the fun is in finding out for yourself.

But all this comes at a cost. If you have less than 2Mb of RAM, buy more.

If you have fewer than two floppies, get another one. A hard disk helps but isn't essential, and an accelerator is also nice, but the game's quite playable on 68000. Even on an A1200 *NetHack* takes quite a while to load. If you've got the RAM, do give *NetHack 3.1.0* a shot; be part of one of the legends of the computer world.

The game itself is on disk 822; the C source code is on 823 and 824. You don't need the source to play the game, it's just for programmers - or

NetHack



anybody who wants to pick through it and cheat.

Fish 825 contains *WComm*, another one of those multi-commodities for WB2 users. This one lets you manipulate windows - move, size, resize, set to prefs, zoom, exclude, include, close, tile cascading, and kill windows, all with hotkeys. It also cycles screens, includes a title clock, a palette window (with up to 256 colours), a pop-up shell, and a notify system, which can inform you about any important event and date. It'll also automatically start any command, a backup for example, at specific intervals.

Personally I'm not mad keen on these sorts of things, because I prefer one small utility for each feature you need rather than fewer multi-utes which tend to overlap each other and give you features you don't need, but for floppy users putting it all in one place helps. Give it a look.

Disk 826 contains the brilliant *Asteriods* (yes, the I comes before the O; apparently *Asteriods* is a copyrighted name!). This is one of those jazzings-up of old ideas, this time with two human players, computer-controlled enemy ships of different sizes, power ups and all sorts of other stuff.

You only get five levels of the augmented game - this is a ShareWare program and the rest of the game comes when you register - but those five are pretty darn challenging by themselves. And you can still play original *Asteroids* for as long as you like; you don't have to have all the bells and whistles. It's still the old black and white presentation, but its graphics and sounds are all IFF and so can be edited as much as you like.

The only problem with *Asteriods* is that it gets rather slow on 68000 machines when you're playing the augmented game and a lot's happening. Mind you, you often need the thinking time! Well worth trying.

On the same disk there's *Date2Day*, a dead simple WB2 utility that lets you select a date and then tells you what day of the week it is. Simple and occasionally handy.

Fish 828 contains *DiskTest*, a utility

to test the integrity of floppy and hard disks. In my experience most floppy failures result from dirty read/write heads or easily removed gunk on the disk - usually FROM dirty heads - but if your heads are clean and you still get errors or your hard drive is playing up, this PD WB2 program, which now has a better interface, will help.

Also on 828 is the latest version of *Post*. This is a PostScript interpreter - it lets you take PostScript data files, which are what most desktop publishers and other graphic pros feed their printers, and output them as pictures, to a non-PostScript printer or as files.

Post supports Type One and Three fonts, but won't run on anything earlier than WB2 any more. It's great if you want to muck about with PostScript but don't have a PS compatible printer. Also on the disk are some fonts for use with *Post*; there are more on disks 829 and 830.

Fish Disk 832 contains *FakeKey*, a utility for use in scripts with programs like *Diskcopy* that require the user to press a key before the program runs. *FakeKey* sends a specified key press to the active window, after an optional delay. Again, this program needs WB2 - if you don't have it, UPGRADE!

On the same disk is *NameThatMonster*, a cute little WB2 commodity for use with *Moria* and similar games that use the slash key for identification - this includes *NetHack*. It allows you to identify a monster or object with a single press of the middle mouse button - so obviously you need a three button mouse.

Disk 836 has the latest version (2.1) of *Slicer*, a program for creating abstract art based on mathematical functions such as the Mandelbrot and Julia sets and related abstractions (chaotic dynamical systems). Features include fast fixed or floating point arithmetic, many different functions, many computation options, many colouring and rendering options, batch mode, multi pass mode, and four dimensional navigation.

If you like to play with chaos math, this is the program for you - but if you're running a 68000 machine I hope you've

got something else to do while it generates its pictures!

Fish 837 contains *Life*, yet another interpretation of the ancient mathematical toy which, theoretically, allows you to make your very own universe, and has wasted untold thousands of hours of mainframe computer time since its invention by John Conway in 1970. The rules are simple - on a square grid, cells can be either on or off. If a given cell has three on neighbors, it will be on next turn, whether it's on or off now. If it has two on neighbours, it will remain the same next turn; off if it's off now, on if it's on now. Any other number of on neighbours and the cell will be off next turn. That's it.

Features of this version include wrapping the screen as a torus, independent setting of the horizontal and vertical resolutions, computing only a specific number of generations, redisplay only every N generations, a macro language to set up initial generations, and more. *Life* works with vertical resolutions up to 65,535 (!) pixels and horizontal resolutions up to 262,112 (!) pixels.

There's also *UnixDirs*, a program which intercepts calls to *dos.library* to add the UNIX style '.' and '..' syntax for current and parent directories, respectively, to file and path names. I.e., you can refer to files in the current directory as './foo' and files in the parent directory as '../foo', or any combination of the two. This makes more sense than the Commodore "" and / stuff, and also makes MS-DOS users feel more at home. Hey, they had to get SOMETHING right!

On **Fish 838** you'll find the latest version (2.4) of *ABackup*, a powerful Shareware backup utility for hard drives or file archiving. Features include a full Intuition interface, a "batch" mode, support for HD floppies, XPK compression library support, a child task for disk write, error recovery when writing to a disk, cyclic backup to and restore from several drives, optional data compression, catalog rebuild function, support for both soft and hard links, and more.

This program's a real alternative to commercial backup utilities for many

users who don't need feature-packed superprograms to do a simple job - if this sounds like you, give *ABackup* a look!

Fish 839 contains *SSW*, *Solar System Wars*. I love these simple two player PD games; this one's similar to *Space Wars*, but you're in orbit around 0 to 3 stars, rather than *Space War's* single sun and asteroid. You can choose from 48 different solar systems, or use the random system selector for a different challenge every round. A variety of weapons are available - which is also an improvement over *Space War's* simple pixel bullets. You can even use two button joysticks if you've got 'em.

Disk 840 has *OctaMED 2.0*, which was originally commercial but has now been superseded by later versions. It's a music editor which was originally designed for making music for programs, but works fine as a standalone music program, and allows you to use eight channel sound by doing real time sample mixing. Definitely worth playing with - even when *MED* (it stands for Music EDitor) was fully public domain it wiped the floor with a lot of commercial packages.

On **Fish 841** there's an update of *PowerData*, which patches AmigaDOS so all programs can read and write files packed with *PowerPacker* in way that is completely transparent to themselves and the system. Programs will read powerpacked data directly, and will also magically start compressing their own files, as they create or update them. This effectively doubles your storage, but you do need a decent sized processor or the system gets a tad sluggish; and it requires at least WB2.

Disk 842 contains *AntiCicloVir*, a Shareware link virus detector that detects 30 different such viruses. Link viruses, as opposed to bootblock viruses, infect files so that when a file is executed or otherwise accessed the virus can pass itself on. Hard disk users are their usual victims, although thankfully the Amiga is not these days a very virused machine - all the idiots apparently use IBMs! *AntiCicloVir* checks your disk and memory for known link viruses, and can also detect known

bootblock viruses in memory. Version 1.8, an update to 1.7 on disk 815.

Fish 843 has *BrowserII*, the simple window-based directory utility for people who just want a simple way to see what's there and move stuff around without mucking about with icons. *BrowserII* allows you to easily and conveniently move, copy, rename, and delete files and directories, and also provides a method to execute either Workbench or CLI programs by double clicking or menu selection. The disk contains versions for Workbench 1.x and 2+.

Fish 844 contains *Digital Breadboard* (DBB), a user friendly digital

**"NetHack ... no sound,
crummy graphics and
amazingly addictive"**

logic circuit simulator. *Digital Breadboard* currently supports 2 and 3 input AND, OR, NAND, and NOR gates, NOT and XOR gates, D, JK, and SR edge-triggered flip-flops, multiple independent clocks, switched and pulsed inputs, outputs, Vcc, GND, independent 4-channel oscilloscope, event counters, variable speed timer, preferences printing, and more.

This is what you've been looking for if you're studying digital electronics, but you'll need WB2 to run it.

Disk 845 has the melodiously titled *Sz'kwaSz'kwa*, a children's game from Northern China, as described by Clifford A. Pickover in his book 'MAZES for the MIND', computers and the unexpected'. If you're into puzzles, this little devil might well tax mum and dad's mind, let alone the kids'. Requires WB2.

On **Fish 847** there's *MidiChords*, a very cute program which replaces and extends the chord key play function you find on lots of cheap keyboards, which makes anybody sound in minutes just like somebody who, well, bought their keyboard from Chris Marshall.

You really need a MIDI keyboard and interface but you can play with the program without them; I wouldn't recommend it though. Basically, this program builds chords around the notes

you play, and has limited sequencing capabilities too. The interface is pretty simple and it's got online help; worth a look if you've got the hardware.

Fish 849 contains a really small version of backgammon to play on Workbench - and just about any version of it, too! Small, simple, fun.

On the same disk there's *CDTV-Player*, a utility for people who'd like to play music CDs while multitasking on WorkBench. It emulates the CDTV's remote control, but is a little more sophisticated. It automatically recognises whether you've inserted a music CD or a program CD-ROM. You can run the program on other Amigas, but for some odd reason you can't play CDs when there's no slot to put them in. Ah well.

There's also *RRTDema* - a real time mapping of a reflection of a graphic onto a sphere. It's system friendly, multitasks, and uses an Intuition screen; basically useless but pretty and good to show off with if you've got a fast machine.

On **Fish 850** there's *4-Get-It*, a fully playable version of an arcade quality puzzle game with 10 levels. The full version has almost 300 levels and 700K+ additional graphics. If you like puzzle games, give this a look.

And to round the highlights off there's also *FastGIF*, a very fast Shareware GIF viewer which now has a graphical user interface, file requester, support for the AGA chipset, support for viewing in a WorkBench window, LFF saving in the registered version, and GIF89a compatibility. *GifView's* always been my favourite for really fast previews of the highly compressed and hence rather slow GIF image format, and now it's got as many bells and whistles as anybody needs.

There's no companion disk for this column, but as you read this the next one will be out, and will contain, among other things, the latest, bugfixed version of *Megaview*, a locally coded program by Tony Miceli which allows you to display pictures as you download them with a modem. I've been talking with Tony and we can expect some more programs from him to be reviewed here - see you next month! □

Phil Campbell's MEGA Entertainment

Metro Games to Sponsor New ACAR Competition

With the unfortunate disappearance of Mindscape from the Amiga games arena, Melbourne's Metro Games have stepped neatly into the gap to sponsor our much loved monthly competitions. "We're delighted to have this opportunity to join ACAR in this way," says marketing manager Sam Stewart. Sam has just been checking out the Amiga scene at Chicago's huge CES show. We'll pick his brains for news in next month's issue.

Record Entries in Final Mindscape Competition

There was a huge pile of entries in the Mindscape *Historyline* competition, which unfortunately co-occurred with Mindscape themselves being consigned to the annals of history.

However, as mentioned above, Metro Games have come to the rescue and are happy to announce the following winners ... B and S Florence, School of Military Engineering, Holdsworth NSW, Gerard Bakker, Templestowe Vic, Tom Adami, Chifley NSW.

Can you Take a Hint?

If you still haven't ordered your very own copy of the fabulous ACAR Hint Disks 1 and 2, why not do it now? We're continuing our World Of Commodore Special for another month - send two blank disks, a stamped, self addressed envelope, and a cheque for \$8.00 to Phil Campbell, PO Box 23 Maclean NSW 2463, and we'll send you back both disks crammed with hints, tips and other goodies. That's a huge 20% saving - definitely ending this month.

EA Nigel Mansell Giveaway Results

It's a big month for prizes! Congratulations to the lucky winner of an autographed copy of *Nigel Mansell's Grand Prix*, which comes complete with a stylish wall poster, also scribbled on by the great man himself. Unfortunately, there was some confusion in the competition answers - some gave Mansell's placing in the '92 race - in which he did not finish - and some answered for '93. Accordingly, we drew one envelope from each pile, then randomly selected from the final two entries. And the lucky winner is ... Mr David Harris, Dee Why NSW. Well done!

ENTERTAINMENT & HINTS & TIPS

Here's a bunch of handy hints to help you through your favourite games. And don't forget, we're looking for contributions to this column - send your Hints and Tips to ACAR Hints and Tips, PO Box 23, Maclean NSW 2463. If you send a bunch of tips on disk with a stamped, self addressed envelope, we'll send you back a free copy of our ACAR

Hints Disk No. 2. Not only that, you'll get to see your name in print in ACAR!

Dragon Breed - Pause the game and type IREM for infinite lives. Use the N key to transport to next level.

Enchanted Land - Type 'TCB RULES FOREVER' on the intro screen and lo and behold all you have to do is to press F3, which allows you to enter an edit screen. Pressing F2 followed by a space will take you to the end of level guardian.

Flashback - Level codes: BACK, LOUP, CINE, GOOD, SPIZ, BIOS, HALL.

Hook - Go to the Bait and Tackle shop and pick up the mug next to the candle. Then keep doing 'pick-up' in the space where the mug was and you'll get all the items you need to complete

the game.

Last Ninja III - Level codes: SUSS, IMED, URTI, BASD, NOUS, RERO.

Mega-Lo-Mania - Epoch codes: COVCPMJVEBL, WKCCHIEUKNL, G A T A V R X R O N T, W W K D X G P X D B Z, KUUCTOPLGHV, PEHAJBPKZQA, GYJDJHPNFHN and the Mother Battle code is: TJLBVSNNIGD.

Pinball Fantasies - Enter these codes WITH spaces when the table is loaded and is moving up and down.

FAIR PLAY - Disables all cheats
EARTHQUAKE - Infinite TILTS
EXTRA BALLS - Give you 5 balls instead of 3

VACUUM CLEANER - Wipes highscore table

DIGITAL ILLUSIONS - Ball doesn't leave table

Entertainment Letters

Hey readers! Get your news and views in print here in the best read Amiga game forum in the Southern Hemisphere! Write to Entertainment Mailbox, PO Box 23, Maclean NSW 2463.

Player Manager Wanted

Dear Phil, I am looking for a computer game called *Player Manager* for the Amiga. Do you know where I could buy this game, as I have five data disks crammed to the brim with saved games and I want to rid of the info if it is of no use. Also, one last question, when is the sequel to *Player Manager* being released?

Todd Street
Thornton, WA

Ed: I'm pretty sure *Player Manager* is no longer available. However, there may be a reader who has a copy they'd like to swap or sell. Keep an eye on this column over the next couple of months and we'll see what turns up.

A Diplomatic Reply

Dear Phil, My name is Michael Fox and I'm writing in response to a letter from K. Swansson published in the Janu-

ary issue. You can get *Diplomacy* from Prime Artifax on fish disk #582.

Keep up the good work Phil. The magazine is going strong after 10 years.

Michael Fox
Airds, NSW

Ed: Thanks Michael - and by the way, I really enjoyed your performance in *Back to the Future!*

An Undiplomatic Reply

Dear Phil, I am after some sort of database for the C64 to enable me to save lyrics of songs to disk and print out the words of these songs when needed. It would only need to be simple for it has to store from anything up to 50 different songs and their lyrics. Have you any suggestions?

Tom Lowrey
Ingle Farm, SA

Ed: My first suggestion, Tom, is that you write to the other end of the magazine! How many times do I have to tell you guys this is the ENTERTAINMENT section - which means we're on about games and stuff, NOT databases.

Electronic Arts Hits Back

Dear Phil, I was very disturbed by your comments which appeared in the May edition of ACAR titled "Electronic Arts New Releases". It seems an extraordinary contradiction that within the same edition you are featuring a review of *Road Rash* distributed by EA and a competition for *Nigel Mansell's World Championship* also supported by EA.

My records show that during the past six months I have sent you the follow-

ing games in the Amiga format: *Zool*, *Nigel Mansell's World Championship*, *Wing Commander*, *Zool 1200*, *A-Train*, *Road Rash*.

In consideration of these facts I believe that your statement is quite unfounded. Newly released entertainment software for IBM and IBM compatible computers is more prevalent in today's market, however, I am sure that this would be the case for each of Australia's major software distributors and EA does not deserve to be singularly persecuted on this issue.

I hope we can work together in a more positive manner.

Robyn Tunstead
Electronic Arts
Ashmore City, Qld

Ed: Sorry we hurt your feelings, Robyn - we certainly didn't mean to. We appreciate the review material you're providing, but at the time our original comments were written (some months ago now) it seemed like you were very lukewarm about some very HOT Amiga titles - *Pinball Fantasies*, for example, had rave reviews all around the world, and was on your catalogue, though you didn't seem keen to publicise it. (I'm still waiting for a review copy!) Anyway, let's let bygones be bygones and do our best to promote great software for what's still a great machine!

Software Videos Wanted

Dear Phil, I would like to find out if there is any place which stocks videos of software demos for the Amiga or IBM, and clips of animations by professional or amateur users.

Michael Cifra
Doveton Vic

Ed: Good question, Michael. From the stack of 15 minute videos on my shelf, I can tell you that Microprose are certainly in the habit of releasing videotape game demos, though I haven't had one for quite a while. Usually, the videos are released strictly to dealers for use as "point of sale" displays. Meanwhile, videos of Amiga animations may be available from Prime Artifax. Give them a call - you'll find an advert in this issue.

Metro Games Chaos Engine Competition

If you read our review of the Bitmap Bros *Chaos Engine* in this issue, you'll see how we feel about it. Yep, it's one of the best Amiga games yet - and you can be a lucky winner! I can feel another word competition coming on ... so here's what you have to do. Simply re-cycle the letters of the title CHAOS ENGINE to make as many words as

you can. Words must have at least three letters, and you can only use each letter in CHAOS ENGINE once. Mmmm... there's CHANGE, and HINGE and GIN and ... Send your word list to Chaos Competition, PO Box 23 Maclean NSW 2463, with your name, address and WORD COUNT on the back of the envelope.

*Life getting a little chaotic? You ain't seen nothin' yet!
Take a walk on the wildside with David Sanna as he
checks out the Bitmap's latest and greatest ...*

THE CHAOS ENGINE

Caught in the constricting jaws of recession, we've seen a dramatic drop in the level of games being produced by the major software houses due to the lack of "player income".

"Never mind that," reply the ever brilliant Bitmap Brothers with their new brainchild *The Chaos Engine*. I don't care how much money you are in debt at the moment but if it's fast gameplay, excellent graphics, and some filthy monster slaughtering that you have been lacking lately, then here is the perfect remedy. Save up and buy this game!

As always, the Bitmap Brothers have created an excellent game, in the same genre as their famous *Gods*. And as usual, they have taken the graphics to the high standard that they are known for. Hold on to your hats while I try to give you some idea of what you can look forward to!

First select whether you want single or two player mode. In single player mode, the computer plays the part of the second man, which is very handy since there are a lot of nasties later on in the game. Next, there's a selection screen where you can choose from six beastly characters. Each has different qualities which may or may not be helpful in the later stages of the game. Each character has a special ability of his

own, ranging from smart bombs to increases in your energy levels. And by the way, the limit of your energy can be increased during the game, which is a very handy feature.

Your screen shows a view from the top of your wide, industrial looking playing field. Your player is set in the middle of a scrolling background, along with player two. The screen automatically scrolls to keep up with them. In each level you must find special keys and "nodes" which open doors and walls so you can continue on your journey to the end of the level and hence deeper into the heart of the Chaos Engine.

One little touch I find helpful are the small save game markers that are activated after you run over them. These enable you to go back to them after you die - which you'll do regularly. Sadly, these are only in the game that you are playing at the time. If you make it to the end of a world (which has four levels) you're given a password for that world - the passcodes are tailor-made according to how much energy and fire power you have.

There are also lots of hidden and secret bonus areas which you'll find along the way. In these areas there might be weapon power-ups, special power power-ups and food which are all very helpful. At the end of every second level you get a chance to boost up your character. You can build up his weapon power, increase his training (so that his stamina

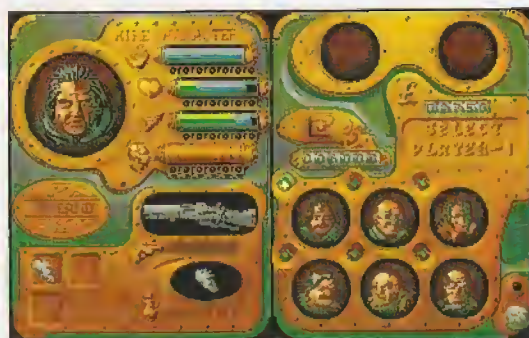
FACTBOX

Chaos Engine is the latest in a long line of smash hits from the famous Bitmap Bros. It's a view from the top baddie-smashing romp, with beautiful graphics and a top class sound track. What else can we say?

Ratings

Playability:	90%
Graphics:	87%
Sound/FX:	82%
Lastability:	92%
Overall:	90%

Distributed by Playcorp (03)
329 2999.



risers) and even buy extra lives with the money you collect by killing monsters.

The graphics are well suited to this style of game. They're extremely detailed and incredibly polished - absolutely flawless!

The little profiles of your characters are intricate and mean looking, giving that extra feel of dominance that you need for serious monster bashing! The sound track and spot effects are top class too. The music is fast and very tight, giving the game play good feel and energy. There are numerous squeaks and creaks for the opening of doors and nice explosions for the destruction of those mutated baddies.

I think by now you know my opinion of this game. I really think it's the most addictive, fast playing and indepth game that I have experienced in a long time. It's a refreshing change, and it's suitable for all ages. I love it!

See you at the Show

It's on again! Australia's most exciting computer show - with something for every computer user from the beginner through to the professional.

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Juris Graney decides it's time to get down and boogie with a bunch of furry little dudes from an underground rock group. Read on for our exclusive playtest of ...



Bevermania has swept the World! The Beavers Supergroup and their megastar leader Jethro have reached number one in the Charts again! With their catchy "funky-hillbilly" style songs and the "Beaverspin" dance craze sweeping the forest discos, the world is their oyster.

Not all the creatures in the valley are pleased with the Beavers' success. The Rappin' Rabbit Rockers, the former number one group, are VERY angry about the Beavers' rise to the top. Not only is it costing them a fortune in record sales, but the Beaver style goes against their underground hare-raising (sorry about that) rock/tap musical taste. They are determined to rid the charts of this cutesy rubbish - once and for all.

A fiendish plan is put into effect. Jethro's beloved wife is kidnapped and held hostage. She will not be released until the Beavers are disbanded and all their master tapes are destroyed!

As you can guess by now, this is where you step in. You take the roll of Jethro the rocking beaver who must rescue his kid-

napped wife, keep his band together and get home in time to watch the *Simpsons*. Seems like an insurmountable task, but when you put your mind and body to it, you'll soon find it's easier than you first thought.

For some reason I didn't expect much from *Beavers*. But so far, I've been surprised. In fact, I'm even getting quite attached to cute little Jethro.

The first level is pretty much trial and error. In most platform games I've played, pushing up usually jumps and the fire button usually shoots. Well get ready for a real surprise. Pushing up in fact activates switches and lets you enter rooms, and pushing the fire button makes your character jump. It takes a while to adjust to this, but when you do, it's easy. The first level is very weird. The screen begins to scroll, and you have to keep up with it. If you fall behind, you lose a life. I was in a panic the first couple of times I played, but I got used to it pretty quickly. As you're running around, you collect pretty little stars while avoiding birds, fish and punching fists.

By now you will have realised that this game is no ordinary scrolling game. Punching fists and stuff like that does not make for a safe reliable game. You will end up snapping your brain in two when you come across

FACTBOX

Beavers is a scrolling platform game with great graphics, addictive gameplay, but surprisingly simplistic sound. It's cute'n'cuddly too - overall, a nice little game.

Ratings

Graphics:	87%
Sound:	54%
Addictiveness:	80%
Gameplay:	76%
Cuteness:	99.99%
Furryness:	100%
Overall:	78%

Distributed by Playcorp (03) 329 2999. Available from your retailer.

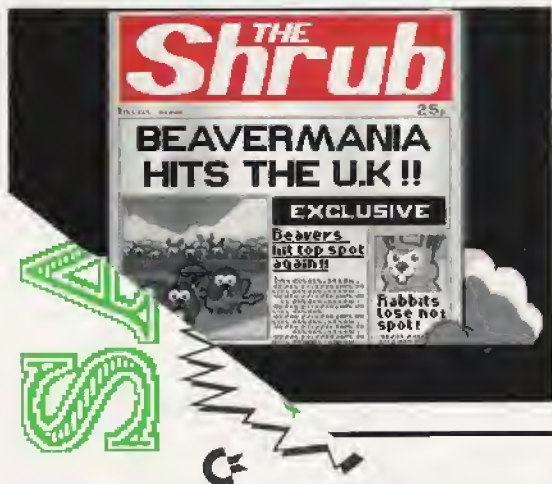


the other characters in the game. But I will give you a hint ...

The sun sets in the ground and so do the coffins.

In the second stage there's a complete change - searching through caverns and killing monsters, a bit like *Rick Dangerous*, though you're still collecting the stars and avoiding all the weird creatures. You'll also collect mushroom seeds, spanners and a heap of other objects which will be important to the success of your mission.

Cartoon style graphics are the order of the day with *Beavers*. They even have speech bubbles. The graphics are bright and colourful, and the scrolling and animation are smooth. The sound, unfortunately, is pathetic - beeps and more beeps and guess what, more beeps. A simple sound track is playing in the background and is very annoying. Overall, however, *Beavers* is surprisingly addictive.



SleepWalker

Phil Campbell pops a few sleeping pills and sets off on a rooftop expedition as he puts the latest platform game through its paces.

Waking up on your feet is a pretty spooky experience. I know. I'm a somnambulist from way back. Well, okay - the fact is I've only walked in my sleep once or twice. But I remember it vividly - the cold shock of waking up on the back verandah, or in the middle of the petunias is something you don't easily forget.

Young Lee, on the other hand, is an habitual sleepwalker. Every night, regular as clockwork, he slides out from between the sheets and heads for the third floor window. It's a precarious journey, but - lucky for Jason - his faithful dog Ralph tags along to keep a watchful eye.

As if in a trance, Lee walks across the rooftops. Then he strolls across a powerline between two buildings - still snoring. There's a service lift trundling up and down an outside shaft; if Lee steps into it at just the right time, he'll arrive safely on the ground.

But here's where the hazards really start. There are open manhole covers anywhere - one false step and the flaxen haired wonder boy is down the drain. Literally.

In *SleepWalker*, you play the glamorous part of Ralph, the cartoon dog. You can drive your mutt with a joystick or the keyboard, though I preferred the latter for speed and directness. Your task is simple ... keep Lee out of trouble.

For a dog, Ralph has a wide range of movements. If he's in front of Lee, he can turn and block his path - perfect when you're waiting for the lift. If he's behind, he can push Lee through awkward situations. With a well timed kick, he can make the little guy jump over

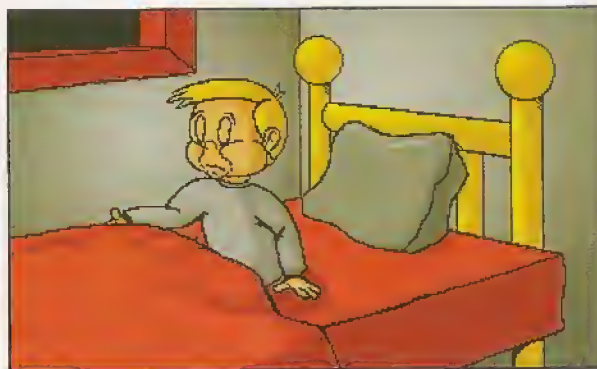
even the most impossible looking obstacles, and if you can time it right with the fire button, you can deal out a good wallop to mean looking nightclub bouncers and dog catchers.

The sewer is definitely the tricky part. Dropping through a manhole cover, Lee and Ralph find themselves in the bowels of the city. There's a narrow foot-



path, and underneath there's a deadly, fast flowing stream full of nuclear waste and other nasty stuff. Just your average city. To make matters worse, at regular intervals you'll find streams of water flowing in from other city drainpipes. If the little guy walks in front of one of them, he'll be up the creek without a paddle.

Like any faithful dog, I make a frenzied dash ahead, closing off the covers to the incoming drains. Then, with a dazzling leap, I head off the little guy before he steps off the end of the footpath and into the drink. A swift blocking manoeuvre keeps him on hold until



FACTBOX

SleepWalker is an addictive platform game based on an unusual scenario. With three disks full of action and plenty of tricky situations, it's a game that should take a long while to complete.

Ratings

Graphics:	79%
Sound:	81%
Gameplay:	86%
Overall:	83%

Distributed by Sega-Ozisoft.
RRP \$69.95. Available from your retailer.

a handy barrel rolls our way in the slime - we step on, and roll our way to the other side.

Let me tell you, this takes some classy timing. And to be honest, I've only managed it once out of something like 87 attempts. Very frustrating. I have, however, managed to do a quick check of the hazards up ahead. When I finally get him out of here, we'll have to contend with fast moving cars on the city streets, fire hydrants, traffic lights and all sorts of other nasties. All in a day's work for a faithful hound.

SleepWalker features some very nice cartoon style graphics and animation. Both Lee and Ralph move smoothly against the platforms-and-ladders style cityscape. The backdrop slides by in two-level parallax scrolling, which gives a nice feeling of depth against the multicoloured sky.

Gameplay is great. It's one of the most addictive platform games I've played for ages, and I'll be sticking with it until I win.

Juris Graney sharpens the points on his helmet and jumps in his longboat as he sets out to conquer the world in ...

Vikings

Remember *Eric The Viking*? It's one of those Monty Python style movies that takes the stuffing out of just about everyone. At the start of the movie, Eric is marauding through a tiny village - he breaks down a door, and finds a voluptuous woman ... and sits down for a cup of tea and a chat. "The trouble with you lot," she says, "is that you're caught up in a circular argument. The only reason for your voyages is to pillage enough to fund your next voyage!"

Coincidence or not, the main character in Brian Vodnik's *Vikings - Fields of Conquest* is a chap in a horny hat called Eric. Smells a bit fishy.

Vikings is a strategy/simulation game for up to six human/computer opponents. Each player assumes the role of a lord in control of a kingdom with up to 20 armies to command in an attempt to become sole ruler and king of England and its surrounding lands. The game is based in part on the history of medieval England with a slight modification ... in the game, the Vikings were victorious in their conquest of Scotland and the northern isles, and are slowly conquering all of England and Ireland! Enough to throw a scare into the IRA!

Where do we start with a mammoth game like *Vikings*? I suppose the beginning isn't a bad place. The first thing you must do is to take the role of one of the six characters who appear on the intro screen. On the main game screen, you'll have to pass the coded copy protection test before you can actually play. Then it's into the meaty stuff - a huge scrolling map of beautiful England. You start with one castle in your chosen area. All around you is enemy territory. The first and most crucial thing you have to do is to send your armies out into the peasant controlled land to gain some territory. A few clicks of the mouse button and the armies are away on their mission.

The next thing to do is to create another army. You start with four armies and can have up to 20. After you've done this, it's the next king's turn. Each turn represents two weeks and there are 24 turns in a full game-year.

Between turns, your armies fight to gain land. After a couple of screens, you are told whether you've won or lost, and presented with a list of casualties. The other king follows the same pattern. In the next turn, you start getting into the meaty bits of the game - mining, income, taxes, flotillas, castles, territories and more, all of which govern how successful you are as a medieval Viking on a rampage of death.

Graphically, the game-

FACTBOX

Vikings looks deceptively ordinary! The fact is, it's a top little Conquest game, with plenty of hidden depth. Recommended as a long term challenge for strategists and non-strategists alike!

Ratings

Graphics:	87%
Sound/FX:	56%
Addictiveness:	98%
Gameplay:	100%
Overall:	85%

Distributed by Directsoft (02) 489 7853. RRP \$79.95.



screen is pleasant. There are no gaudy bits of scrolling, and there's no animation. Everything is smoother than the proverbial baby's bottom. The view of the game is from the air, much like most strategy games, with little flags and castles dotted around the landscape to show the progress of the game.

Though there's nothing fancy about *Vikings* at first glance, every time you boot it up, it gets more and more addictive. There is always something new to see and play with. There's very little to speak of in the sound department, but I usually turn on the stereo and listen to music when I play the game anyway.

To me, *Vikings* is an ideal game for any strategist. In fact, even if you're not a keen strategist, you will still love it. It has all the makings of a great game - to my mind it's even better than *Populous*, and one of the best games in the genre.

SuperFrog Solution

Part 1

by Jesse Ahern

Hi folks, and welcome to this little guided tour of *SuperFrog*! First up, you'll find level codes for all levels of the game, so feel free to take a look around each level before you turn to the solutions below. There's helpful information with the pictures too - take a moment to familiarise yourself with your enemies!

SUPERFROG CODES

CODE		LEVEL
000000	MAGIC WOODS	1.1
234644		1.2
447464		1.3
747822		1.4
392822	SPOOKY CASTLE	2.1
446364		2.2
984448		2.3
477444		2.4
343522	FUN PARK	3.1
882311		3.2
992334		3.3
091332		3.4
467464	ANCIENT LEVEL	4.1
818234		4.2
182394		4.3
298383		4.4



452234	ICE WORLD	5.1
984841		5.2
383772		5.3
093152		5.4
837122	PROJECT F	6.1
387211	SPACE LEVEL	7.1
981122		7.2
017632		7.3
398112		7.4

Instructions for the first part of each level

Yeah, I know - only instructions for the first part of each level. But I don't want to spoil all your fun! So here goes.

Magic Woods

Make your way through the woods and collect the golden key. You start

near a cluster of bees and some coins. Jump up to the left and grab the coins. Now, run to the right and jump the first set of spikes. Squash the blob and grab the fruit. Jump over the next set of spikes, squash a second blob and run up the slope, collecting the coins located on top. Shoot or squash the bees if they get in the way.

Run down the slope collecting the fruit, and jump onto the ledge above the hedgehog.

Grab the Lucozade and jump on the spring, snatch the coins on your way up. Head over to the left in mid-jump, and get the bonuses on the ledge. Drop off the ledge back to the spring, and run right.

Soon you will come to a large set of spikes. Leap over these, collecting the coins. Get the Restart and Speed-Up pills, and climb the tree. Dodge or shoot the bees, and grab all the coins.

To the far right should be a set of spikes. Jump over these and into the wall, and you will discover a secret passage. Run through and collect all the bonuses, then jump onto the spring and jump up through the wall. Go left back up the hill and get the bonus things if needed.

Back down the hill are a collection of springs. Jump on these and grab all the coins. Once this is done, run past the springs to the right and find some bonuses. Get these before jumping on the far-right spring and up to the top of

FLOATERS- Just like the old Bees. Either jump on them, or shoot them with your Destructo-Spud.



BIGMOUTHS- Scamper around, now and then stretching upwards. While running, they can be jumped on. Don't try it while stretching.



WALKERS- Run around in your way. Sometimes they shoot a barrage of pellets at you. Avoid these guys, they are un-squashable.



LASERGUNS- Similar to the Stone Faces. Wait until they have fired.



ROTATING GUNS- Very annoying. Their aim is accurate and they are hard to dodge. Don't hang around them for very long!



HEDGEHOGS- Small and quite fast. Jump or dodge them, as they can't be killed.



BLOBS- Easily despatched. Jump on them twice to kill and collect the bonus fruit.



SNAILS- Similar to Blobs, but can slide around.



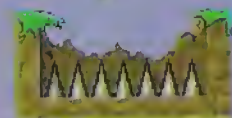
BEES- Have an annoying habit of blocking your path. Jump on them or shoot them.



MONKEY- Can't be killed. Just jump over or dodge.



SPIKES- You will discover many of these during the game. Use caution; they are deadly even with temporary invulnerability.



BATS- Just like the Bees. Shoot or jump on them.

SLINKIES- Can't be shot or squashed. Jump over them or just bypass them.

GHOSTS- Float along passages. Can't be shot or killed, so dodge or leap over them.

SPRINGERS- Can be squashed while sitting, but in mid-air you're the one who gets hurt.

MACE HEADS- Spiked metal balls swing from chains in many of the games levels. Duck, or jump through the chain.

BRICK FACES- Embedded in walls are these fire-spitting faces. Wait until they have fired before continuing.



the ledge. Get the three Speed-Ups and zoom down the hill collecting the coins. At the top of the slope is a Slow-Down pill. Jump this, and squash the blob. The exit will be in sight. Dispose of the bees, grab the Lucozade and go through the exit.

Spooky Castle

The witch's castle is a perilous place, far too dangerous to hang around for long. You must find out where the evil old crone has taken your girlfriend.

First, grab the fruit and get some bonus coins by head-butting the portrait near the entrance a few times. Head right and get the Speed-Up while going down the slope. Jump over the Slinky, grab the bonuses, and leap over a second Slinky onto the ledge. Don't go right yet - jump up to the left and onto the Springer to kill him. Jump up onto the left ledge and onto the spring to get the coins. While in the air, push to the left and uncover a secret tunnel through the wall. Enter it and stand in the gap. Now jump up to the left and you'll find another tunnel. Run through and collect all the bonuses. Now hunt along the right wall and find another secret tunnel. Run through and get the Extra Frog and the other bonuses.

Now head back the

way you came, this time going right on the ledge. Jump up and change the switch, and then jump onto the step and grab the coins. Beware, as it will retract into the wall, so jump off it quickly to the other side. Jump over the Ghost, and up the ledge. Get the Lucozade and the Restart-Pill and jump the spikes, getting the coins on the way. Squash the Springer,

and slide down the slime. Dodge or shoot the Bats, and drop down the hole and collect all the bonuses. Jump back up to the right, dodge the Mace-head, and slide down the next slime-slope. Be careful, though, as this slope leads onto spikes in the wall.

Now you come to thrusting spikes. Run through quickly at the right time. Dodge the Bats, and grab the coins. For some more bonuses, go past the exit to the right and enter a secret passage. Get the bonuses and follow the tunnel until you come to a spring. This will shoot you up to the main tunnel. Now go back along to the exit again.

That's it for this month - stay tuned for our next exciting installment as we check out the Funpark, IceWorld, Project F and the dreaded Space Level!

SPHERES- Enter the screen and shoot at you. They take about four or five shots to kill.

BLOBS- Come into the screen and explode in a cluster of bullets. Kill quickly before they burst.

SPACE INSECTS- Enter the screen and float around. Shoot 'em.

SAUCERS- Just float up the screen from bottom to top. Shoot them and collect the bonuses they leave.

LIGHT BULBS- Fly in and shoot bolts of electricity at you. Destroy them quickly as possible.

LADYBIRDS- Enter in waves. Just shoot them and collect the bonuses.

MISSILES- Fly in as one, but split into three. Shoot quick, they are too fast to try to dodge.



Last month we left you half way through our full solution to Kings Quest V. So what happens next? Mark Harris explains.

The Mountain Path

Last month we arrived at the Mountain Path. You're cold, you're hungry, and you're being attacked by Wild Animals. First, wear the cloak. Now eat the lamb, once only. Walk up the mountain path until you come to a chasm. Now save your game, just in case. Throw the rope to the rock outcrop, and climb it. Look at the waterfall, and you'll see rocks that can be crossed. Use the hand icon to jump across the rocks. Now cross the logs using the travel icon. Continue up the path. Oops! The wolves take Cedric. Bye Cedric! You'll come to a short hill after walking to the edge of the eastern screen. Use the sled. After landing, walk up the path and you'll find a hungry eagle. Give the lamb to the eagle. Now continue down the path, and the wolves will take you to Queen Iceabella.

Queen Iceabella and the Yeti

Play the harp. Queen Iceabella will tell you to kill the yeti. The wolf will take you to the yeti cave - now throw the pie at the yeti. Walk to the back of the yeti's cave and use the hammer to take the crystal. Return to the wolf, who will take you back to Queen Iceabella. In her gratitude, she will release both you and Cedric, and then the wolf will lead you down the mountain. Travel south from where you are dropped off by the wolf. Walk across the ice field to the vertical cliff, and start to climb the rocks. You will be captured by a two-headed bird.

Two Headed Bird

The bird takes you to its nest. Take the locket. The eagle saves you and drops you on the beach. Take the iron bar. Walk to the north. Use the beeswax after examining the boat. Get into the boat and sail one south and four east to Harpies Island.

Kings Quest V Solution

Part 2

Harpies Island

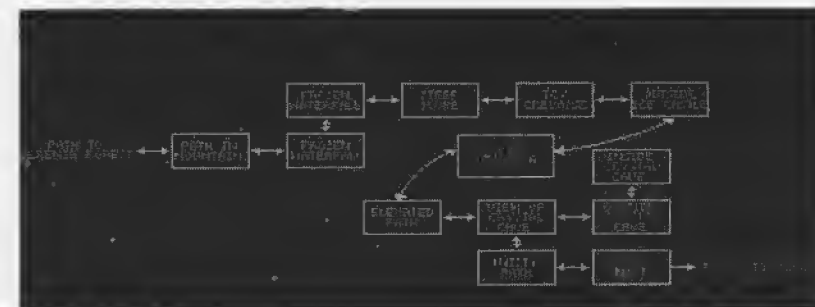
Harpies capture you. Play the harp. Take the fish hook. Pick up injured Cedric. Take the shell from the beach near the boat, then sail four west to the boat house. Ring the ship's bell and give the shell to the hermit - he heals Cedric. The mermaid then leads you to Murdock Island.

Murdack Island

On the Beach. Near the boat, take the fish. Now walk up the steps, and use the crystal to get past the dragon statues. Walk up to the castle and then walk to the west side and use iron bar on the grate. Enter the dungeon by using the hand icon. This would be a great time to save your game.

The Dink in the Dungeon

Walk south then make right hand turns until you meet the Dink. Give tamarine to the Dink and then pick up the hairpin after the Dink leaves. Use the Eye Icon to bring up the compass on the bottom. After you get the hairpin, head northeast and northwest till you are at the intersection - then head north, then east and west till you can't travel north anymore. Now go west, then



south and west and north to the entry to the castle.

Pantry

Unlock the locked door with your hairpin - knew it would come in handy somewhere! Open the door and go into the pantry. Open the cabinet on the west wall and take the peas. Walk north into the kitchen and talk to the girl. Give the locket to the girl and then talk to her again. Walk east.

First Floor

Don't play the organ, and if the cat appears avoid it. Walk around until you find the blue guard. Throw peas at him, then walk around till you are captured. After this, if you encounter the cat throw

fish at it, and then put it into the empty sack (the cat is Murdock's brother from *King's Quest III*).

Cell

You're thrown into a cell. Look into mouse hole, then use your fish hook to get the cheese. The girl opens a hole in the wall. Follow through the hole and then through the dungeon - make sure

you don't lose her or you'll get hopelessly lost. If all goes well, you'll end up back in the kitchen. Save the game! Now go to Murdock's bedroom via the stairs, and enter the hall on the second floor, which leads to his study.

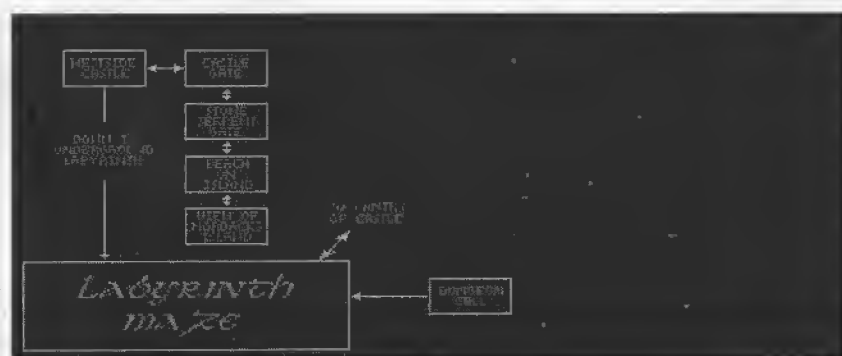
Study

Go into the study, and look at the book on the desk. Note the spells in the book. Look into the bedroom. Murdock will go to sleep on the bed. Walk into the bedroom, take the wand and go into the lab (to the west from the hall).

Lab

Walk up the spiral staircase to the balcony. Walk to the east side of the balcony. Put Murdock's wand on the machine. Now put Crispin's wand and the cheese on the machine. Now take Crispin's wand. Murdock changes into a flying insect. Use Crispin's wand: select the tiger spell, and Murdock changes into a dragon. Use Crispin's wand again: select the rabbit spell. Murdock changes into a cobra. Use Crispin's wand again, and select the mongoose spell. Murdock changes into fire. Use Crispin's wand again, and select the rain spell; Murdock dies and everyone goes home!

Congratulations!



MICHAEL SPITERI'S

Adventurer's Realm

First up, if this is the first time you've seen this magazine and you've just been to Sydney's World of Commodore Show, welcome, welcome, welcome to what some say is the best part of the magazine - Adventurers' Realm. We hope you enjoy reading ACAR and will soon join us in the salvation of the Amiga.

If adventure gaming is your scene then you have come to the right part of the magazine. Adventurers' Realm helps out adventurers from across the nation and even overseas. If you are stuck in any adventure, let your feelings be known to one of the 70 clever contacts scattered around the nation, or send in for one of our many free hint sheets. If all else fails, write to me here at the Realm or to Kamikaze Andy in his Role Playing Game Dun-

geon. If we cannot help then your mail will be displayed here, and that usually guarantees help.

Of course, we do more than just provide help. You can send in your hints and tips, or gossip, rumours, complaints, stuff to sell or swap, jokes or anything else to me. I'll just look at them, shake my head in dismay, and then publish it all! The main address is: Adventurers' Realm, 12 Bridle Place, Pakenham, Vic 3810. Kamikaze Andy lives in his Dungeon as is willing to help out any people stuck in role playing games. You can write to him at: Realm's Dungeon, PO Box 1083, Canning Vale, WA 6155.

If a reply to your letter leaves this place it won't get far unless you enclose a stamped addressed envelope. Got it?

Realm's Trading Post

Okay folks, you can advertise your games to swap, sell or buy, but they have to be legit. No pirate stuff thank you very much. Enough of the small talk, let's get the ball rolling.

Jane Stenner of 92 Wood St, Tenterfield, NSW 2752 is the market for *Might and Magic I and II* for her Amiga. These are fairly old games, so someone must have them lying around.

Kellie Spiteri of 62 Ironbark Street, Elanora, Qld 4221 currently has *Life And Death*, *Mortville Manor*, *Zak McKracken* (with hint book), *Maupiti Island*, *Heimdall*, *Heart of China*, *Codename Ice-man*, *Mystery of the Mummy* and *Search for the King* to swap or sell. Kellie would like *Operation Stealth*, *Future Wars*,

Bargon Attack and *Rise of the Dragon*.

Doug Smith of 19 Hibiscus Avenue, Brooms Head, NSW 2463 already has had success with this section has come back for more. Doug wants *Willy Beamish*, and will offer *Space Quest 4*, *Heart of China*, or *Castle of Doctor Drain*. Doug also has an extensive list of titles for sale, so drop him a line for a list.

Ashley Bryant of 11 Raingill Avenue, Warrnambool, Victoria 3280 has *Pool of Radiance* and *Hillsfar* both for the C64. He is asking \$25 each, or \$40 the pair. Also, for \$5 Ashley is offering the most powerful disk of characters from the *Pool of Radiance*, all equipped with the most powerful objects. Make sure you send Ashley a blank formatted C64 diskette.

Free Hint Sheets

Somewhere beneath the huge pile of mail in our living room, Kerrie, the Lady of the Realm, is burrowing away, deeper and deeper. Make sure your mail is in that pile, and to do that you have to list four hint sheets from the list below and enclose a stamped addressed envelope, and Kerrie will personally make sure you receive those hint sheets - free of charge! Remember though, you can only have four, and you won't get any if you don't enclose a stamped addressed envelope. Is that clear enough? Send your requests to: Kerrie's Free Hint Sheets, 12 Bridle Place, Pakenham, Vic 3810.

Mortville Manor/Maupiti Island Combined Hint Sheet, *Monkey Island I and 2*, *Space Quest 3 and IV*, *Wonderland*, *Leisure Suit Larry III*, *Champions of Krynn*, *Kings Quest V*, *Pool of Radiance*, *Zak McKracken*, *Zork I, 2, & 3*, *Bards Tale I, II, & III*, *Hitchhikers' Guide to the Galaxy*, *Guild of Thieves*, *Jinxter*, *Pawn*, *Corruption*, *Faery Tale*, and the *Clever Contacts Complete Listing 1993*.

PS: Make sure you pick up some hint sheets at the WOC Show.

Realm's Hint Books

As reported last month, we have sold out completely of the first Adventurers' Realm hint book. However, we still have a few of its sequel available via mail order. Just \$10 will buy you a big book packed with hints and tips for over 25 adventure and roleplaying games, as well as heaps of mapping pages.

Order your copy now from Saturday Magazine Pty Ltd, 21 Darley Road, Randwick, NSW 2031. You can phone Darrien for more information on (02) 398 5111, or fax your order and credit card details on (02) 398 5322.

Realm's Official Hint Disk

The demand is high, but there's enough to go around. Just send a \$5 cheque payable to Michael Spiteri and enclose a blank disk and a stamped addressed envelope, and I'll send you out the first Official Solutions Disk containing solutions and hints for 89 games! The disk was put together by Graeme Beaven and contains help for a huge range of adventure and roleplaying games.

Remember, you must enclose a stamped addressed envelope - we will supply the disk - and send it to Realm's 1st Hint Disk, 12 Bridle Place, Pakenham, Vic 3810, or pick one up at the WOC Show in Darling Harbour.

Help, Help & more Help or the Smart Adventurers Dept.

Okay, here are Tim Wilson's (from Rye in Victoria) late arrivals:

Game: Monkey Island 2

For: Daniel Cannon (April issue)

Help: With the underwear, beard, doll, skull and the hankie, use the JuJu bag to make a voodoo doll of LeChuck. Use a shovel on the grave. Use a wrench, a monkey wrench no use monkey for pump (!). Jojo monkey from bar. Give the map pieces to Wally.

Game: Curse of Enchantia

For: David Marjanovic (April issue)

Help: Press every button except the third one!

Game: Hook

For: David Marjanovic (April issue)

Help: Use the money in the pots to buy the metal detector/magnet thing. To find the gold you probably have to do other things (!)

And this is Tim Wilson's latest offering....

Game: Curse of Enchantia

For: No Name (May issue)

Help: To operate the wishing well you must have done everything else as the well is the last part of the caves. Use the string and magnet to get the wire from the little hole in the cave. Give rocks (all three sizes) to the rock guru and he'll give you some string.

Thanks for all those hints, Tim.

Australian Commodore & Amiga Review back issues still available

APRIL 1992 Vol 9 No 4

● Upgrading to Workbench 2.0 ● Technosound Turbo
● TurboPrint Professional ● CanDo ● AMOS - How to write a game ● Computer Care - Part III ● C64/128 - User groups, game conversions, which printer
Games - Strike Fleet, Final Blow, Knightmare, Micropose Formula One, Grand Prix, Vroom!, Lotus Turbo Esprit, Champions, Moonstone.

MAY 1992 Vol 9 No 5

● DPaint IV ● Music basics ● SuperJam - easy MIDI
● Desktop Video Book ● AMOS - Writing a game II
● CanDo - Workbench Control Panel
C64/128 - PD update, Tips and tricks
Games - Fighter Command, Action Pack, Sliders, Videokid, Bane of the Cosmic Forge, Black Crypt, Gateway to the Savage Frontier.

JUNE 1992 Vol 9 No 6

● Amiga 600 ● AX RAM Four - A500 memory expansion
● A-570 CD ROM drive ● Answer - Amiga Phone Program
● DPaint - Stencils ● Amiga for Beginners book ● CanDo - System Information Window ● Computer Care - Part IV
C64/128 - Hard Drives, GeoTerm, Joysticks
Games - Castles, Special Forces, Charge of the Light Brigade, Space Crusade, Home Alone, 4D Sports Driving.

JULY 1992 Vol 9 No 7

● AMOS for the beginner ● Phoenix Colour Digitiser
● Quick and easy video titling ● What the manual doesn't tell you ● AMOS - Menus ● CanDo - text editor ● Super Workbench III PD ● C64/128 - Gateway
Games - Titus the Fox, Harlequin, Mega-Pack 2, Baron Baldric, Legend, SimAnt

Nov 1992 Vol 9 No 11

● Amiga DOS 2.1 and 3.0 ● Artificial Landscape
● DPaint - the right moves ● CanDo - designing databases

● AMOS - AMOS Pro new features

● C64/128 - GeoCanvas, floppy drives
Games - Great Napoleonic Battles, California Games II, AGE, Epic, Treasures of the Savage Frontier, Tennis Cup II

DEC 1992 Vol 9 No 12

● Opal Vision ● Blizzard Turbo Board Memory
● Video Director ● BBSs ● AMOS Professional
● CanDo - database reports
● C64/128 - C64 to PC, GeoWrite
Games - Myth, Dojo Dan, Liverpool, Crazy Cars II, Hook, Crime City

JANUARY 1993 Vol 10 No 1

● CanDo V2.0 ● Mini Office ● Hard Disk Standards
● Removeable mass storage ● Amiga Conference
● Display System ● Deluxe Paint Masterpiece
● PageStream Hotlinks 1.1 ● AMOS - AMAL
● CanDo - AREXX
● C64/128 - Printer Problems, GeoVISION, Modems
Games - Zool, Troddlers, Jaguar XJ220, Aquatic Games, PD Games, Robosport

MARCH 1993 Vol 10 No 3

● Dirwork and Diskmaster ● Crystal Sound
● AmiBack Vs Quarter Back ● Protracker ● DTP - Technique & design ● CanDo - A word Scramble game ● Opal - digital image composition ● C64 - Geos Utilities
Games - Hagar the Horrible, Howzat!, Nigel Mansell's World Championship, Nick Faldo's Championship Golf, Paperboy 2, Tearaway Thomas

APRIL 1993 Vol 10 No 4

● Word Processing Comparison ● How to Connect Two Computers ● Getting Started with Scripting - Part II ● Virtual Reality Today ● Multi Plot XLNe ● CanDo - Pattern Matching Game ● DTP ● Hot PD ● Amos Column - Dual Play fields ● Deluxe Paint Tutorial - Hi-res ● Andy's Attic

Workbench 2 ● C64 - PD Update

Games - Curse of Enchantia, Wing Commander, Shadow of the Beast III, A-Train, Pinball Dreams, Catch 'Em

MAY 1993 Vol 10 No 5

● Professional Page - Does version 4 of Professional Page put it in front of PageStream? ● World of Commodore Show - Report from New York ● My Amiga 1200 - User report ● Amiga 1200 Games Compatibility Guide ● Morphing for Peanuts - the latest in image morphing and special effects software for the Amiga owner with plenty of RAM ● Education Column ● You Can CanDo - Make your own Directory Utility ● Andy's Attic - Exploring WB2 ● Deluxe Paint Tutorial - Easy Abstracts with Virtual Colours ● C64 Column ● Hot PD
Games - Hook (Full Solution), Lemmings 2, Historyline 1914-1918, Sword of Honour, Best of the Best Championship Karate, Lethal Weapon, Road Rash

June 1993 Vol 10 No 6

● 3D Animation with Aladdin - Easy for beginners, Aladdin gives good end results without the long waiting usual with this type of program ● The Animation Workshop - The answer to every Amiga animator's dream, Cut, Splice, Scale, Delay in a mouse click ● New Releases for World of Commodore Show ● How to Beat those Disk Swapping Blues ● Deluxe Paint Tutorial - Animating in (apparent) 3D ● Amos Column - Interview with Francois Lionet ● Andy's Attic - Exploring WB2 ● CanDo - Your own Directory Utility Part 2 ● Education Column - World Construction Set ● Down the Opal Mine - Using the Alpha Channel ● C64 Column - Which 128 WP, For Sale ● Hot PD
Games - KGB, Fate - Gates of Dawn, Darkseed, Civilisation, King's Quest Full Solution Part 1

\$3 each including postage. Send cheque or phone/fax credit card number. Saturday Magazine, 21 Darley Rd, Randwick NSW 2031. Ph (02) 398 5111 Fax (02) 398 5322.

Clever Contacts

Clever Contacts, we haven't forgotten about you - keep reading for details of a great competition for the chosen few. Meanwhile, one of the chosen few would like to upgrade his clever contact listing.

Tony Finn, 214 Fernleigh Road, Wagga Wagga, NSW 2650 can now help in the following games: *Deja Vu 1*, *Deja Vu 2*, *Conquests of Camelot*, *Black Crypt*, *Lancelot*, *Dragons Lair 1 & 2*, *Loom*, *Maniac Mansion*, *Arthur (Quest for Excalibur)*, *Operation Stealth*, *Champions of Krynn*, *Lure of the Temptress* (with an acknowledgment to Graeme!), *Colonels Bequest*, and *Heroes Quest 2*.

If you'd like a complete list of Clever Contacts (there is bound to be one close to you), write to Kerrie in the Free Hint Sheets department.

Finally, a big thanks to all the Clever Contacts out there.

Problems, Problems & more Problems or the Troubled Adventurers Dept.

Just a couple of problems this month for all of you to peruse and ponder.

Robin of Hackett in ACT is stuck on *Spellcasting 301: Spring Break*. Robin writes: "I have almost completed this game having won all the contests except for the final one. I have put the four seahorses into the correct positions in Sitnalta but I cannot figure out what I should do know."

Tony Finn of Wagga Wagga in NSW requires some help in *Flashback*. He writes: "I'm stuck on level 2. I've seem to come to a dead end. I can see the platform that I'm supposed to get to but I can't find a way of reaching it. I'm hoping that there are some fellow Flash backers out there who can shed some light before I go completely insane!"

Adventure Chat

Tim Wilson from Rye writes: "Got my May ACAR in the mail today and was quite surprised. I sent a letter to you on 1st April with solutions for troubled adventures for this mag and I don't see them in the May mag! Can you tell me if it's you because I when I send letters I usually go the Post Office to post letters. Near my area is a lone PO Box mailer and I don't know if it gets checked. It would be good to know if it takes longer to get printed so I don't have to worry. Also, where's Kamikaze Andy?"

Mike: Mmmm, I don't know Tim. I mean, you did post the letter on April 1st, and you know what that day is, don't you? I wonder if that lone PO Box mailer is still there? Seriously though, yours is a common complaint. Would you believe that I'm writing these words in the month of May? Yep, it takes a couple of months for the Realm to go through the editorial and printing process, like everything else in the mag.

As for your particular letter Tim, I didn't get it until late April, which means your hints will go in this issue.

Now, as for Andy ... The Dungeon resides somewhere in the Twilight Zone, such is the world of a dedicated role game player like Kamikaze. Don't worry, he always returns ... eventually, and sometimes in one piece.

Doug Smith from Brooms Head, NSW, writes: "I want to thank you for your excellent game swap section. For people with no access to things like software markets and user group meetings (Brooms Head: pop 300) your column is very welcome indeed. Since your mention of the software I have for sale and swap I've had a great assortment of letters from every state, and have swapped about eight games. The software companies haven't missed out either, since I have sold enough to buy a couple of new games. It's been great fun and I hope the letters keep coming."

Mike: Thanks Doug. The Realm Trading Post has been attracting a lot of attention and it's good to hear people are getting results.

Doug continues ... "I agree with the infinitely wise meanderings of Stuart George on the demise of adventure games. *Kings Quest 6* indeed! Bahhh! Sierra lost

the plot somewhere back in 1990, and they still haven't found it again. The corpse stirred briefly when Dynamix was acquired, but its former head and driving force, Jeff Tunnell, has left them to start a new company, hasn't he? (What's *Dagger of Amon Ra* like? Anyone know?) They reached their peak on the Amiga with games like *Camelot* and *Heroes Quest* and after that it has been a downhill slide. Ah, the good ol' days. I still recall with fond nostalgia the three hours I spent in *Space Quest 2* trying to stick that blasted suction cup on the wall to escape the pit. None of this point and click nonsense. That was REAL interaction."

Mike: I doubt if any Amiga owners have played *Kings Quest 6* or *Dagger of Amon Ra*, as they never made it to their machine. Though I quite liked playing *Kings Quest 6* with its great little romantic plot which made you want to throw up, and *Space Quest V* was quite a hilarious romp. Still, the days of classic type-in adventure games are all but numbered, and if Sierra do decide to support the new Amigas, I doubt we'll see a return of those great hair pulling, verb crushing, long night adventure games.

Ashley Bryant of Warrnambool, Vic writes: "I am in the process of buying an A500 and selling my C64 (as much as I would like to keep it). I have thought about keeping most of the software and buying a C64 emulator so that I can use them on the Amiga. What is the best C64 emulator on the market at the moment and will load all the software I need loaded? How do I order the Fred Fish companion disks?"

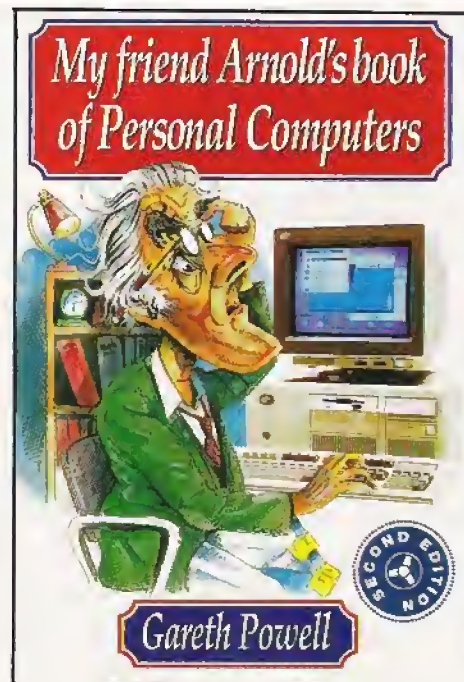
Mike: Blimey, talk about off-topic. Eh, Ashley, there's like 60 or so pages before you get to the Realm that look after your sort of questions. Still, I'm an adventurer at heart so I'll do my best to answer your queries. The best C64 emulator on the market is the trusty C64 computer itself, which means you won't have to buy an emulator, eh? You'd be lucky to get fifty smackers for your C64, and I cannot imagine an emulator on the market that will run all your software (though I may be wrong!). Keep your C64 and all the software is my advice. As for Fishy Fred disks, try Prime Artifex, who have some nice big adverts in this mag.

Already a bestseller since its publication in 1990, *My Friend Arnold's Book of Personal Computers* is an easy-to-follow guide for anyone who has ever been bewildered by computers; for everyone who needs to understand computer jargon but doesn't know where to begin.

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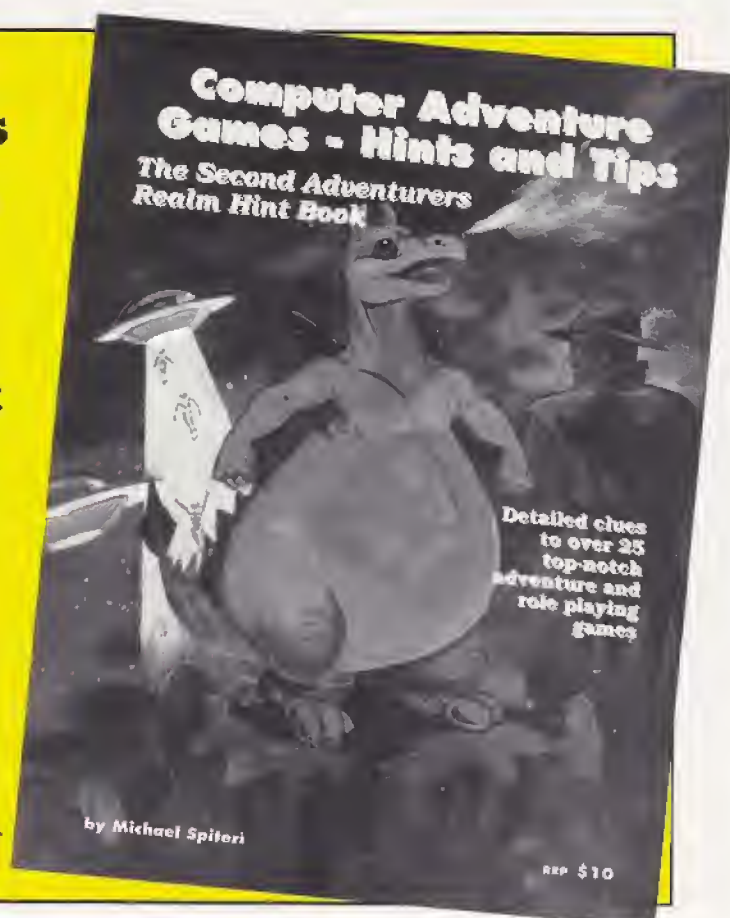
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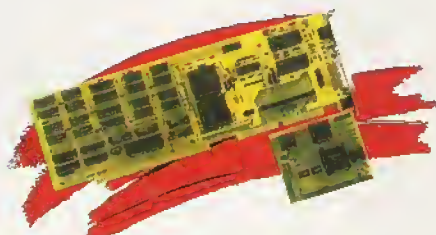


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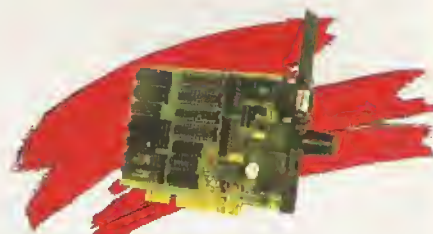
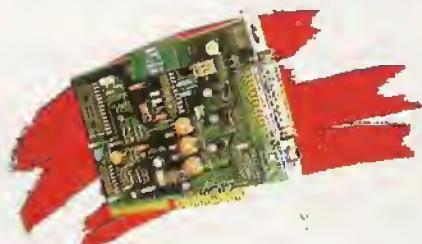


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